

Scientific and Technical Information Center

Requester's Full Name: Keith Goy Examiner #: 78264 Date: 2/14/05
 Art Unit: 1625 Phone Number 30 0691 Serial Number: 10353254
 Mail Box and Bldg/Room Location: 4A68/4C70 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of invention: See Bibs page

Inventors (please provide full names): See Bibs page

Earliest Priority Filing Date: _____

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

*Rush
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STAFF USE ONLY

STAFF USE ONLY	Type of Search	Vendors and cost where applicable
Searcher: _____	NA Sequence (#) _____	STN _____
Searcher Phone # _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) _____	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____	Dr. Link _____
Date Completed _____	Litigation _____	Lexis/Nexis _____
Searcher Prep. Review Time _____	Fulltext _____	Sequence Systems _____
Clerical Prep. Time: _____	Patent Family _____	WWW/Internet _____
Online Time _____	Other _____	Other (specify) _____

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L68 ANSWER 1 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:808869 HCAPLUS

DOCUMENT NUMBER: 138:138819

TITLE: Behaviour of nanoparticle (ultrafine) titanium dioxide pigments and stabilizers on the photooxidative stability of water based acrylic and isocyanate based acrylic coatings

AUTHOR(S): Allen, Norman S.; Edge, Michele; Ortega, Amaya; Liauw, Christopher M.; Stratton, John; McIntyre, Robert B.

CORPORATE SOURCE: Faculty of Science and Engineering, Department of Chemistry and Materials, Centre for Materials Science Research, The Manchester Metropolitan University, Manchester, M1 5GD, UK

SOURCE: Polymer Degradation and Stability (2002), 78(3), 467-478

CODEN: PDSTDW; ISSN: 0141-3910

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A series of nano-particle grade anatase and rutile titanium dioxide pigments were prepared with various densities of surface treatments, particle size, and surface area. Their photochem. activities were determined and compared in water-based acrylic and isocyanate acrylic coatings with typical **benzophenone** and hindered piperidine light stabilizers. Their performance on wood and aluminum substrates is assessed by FTIR, color, and gloss change and mass loss following artificial weathering. UV absorption anal. of **benzophenone** and **benzotriazole** chromophore based UV absorbers shows that they **absorb** more strongly in the near UV below 350 nm. However, nanoparticle rutile absorbs more strongly above this range and therefore, operates as a strong opacifier. Anatase also possesses opacifying behavior, but to a lesser degree than rutile above 380 nm. In water-based acrylics the absorbers undergo decomposition during irradiation whereas the nanoparticles, by virtue of

their inorg. nature are inherently stable. Mass loss expts. indicated that anatase is a photosensitizer, though the intensity of the effect was found to be dependent upon the nature of the coating. Rutile was found to be an effective stabilizer with performance greater than or equal to the organic absorbers and HALS. Combinations of anatase and HALS were found to be antagonistic. Little or no synergy was observed between rutile and HALS. The outstanding performance of both anatase and rutile nanoparticles is visibly and colorimetrically evident on clear acrylic wood coatings with rutile being the more effective. The 70 nm particles are more effective than the 90 nm particles. However, this data for anatase is in marked contrast to the chemical changes from FTIR anal. Here the difference may be due to the color bleaching effect on the lignin products through the photosensitizing activity of the anatase. From a com. point-of-view coated nanoparticles offer a significant opportunity for cost-effective benefits over conventional organic absorbers and HALS for the photoprotection of acrylic coating systems.

IT 3896-11-5, 2-(5-Chloro-2H-benzotriazol-2-yl)-6-(1,1-dimethylethyl)-4-methylphenol

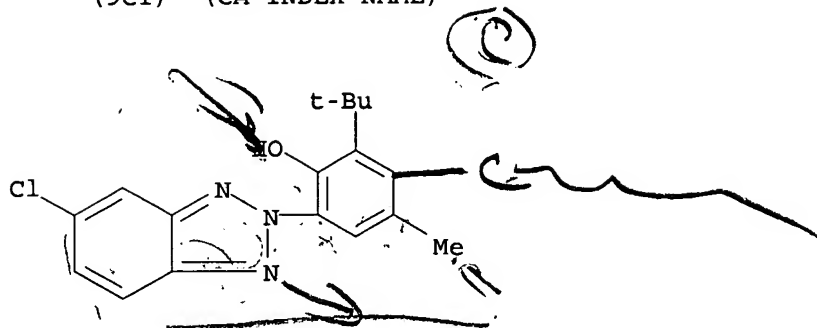
RL: MOA (Modifier or additive use); USES (Uses)

(Lowillite 26, stabilizer; effects of titania nanoparticle pigments and stabilizers on photooxidative stability of water-based acrylic and isocyanate-based acrylic coatings)

RN 3896-11-5 HCAPLUS

CN Phenol, 2-(5-chloro-2H-benzotriazol-2-yl)-6-(1,1-dimethylethyl)-4-methyl-

(9CI) (CA INDEX NAME)



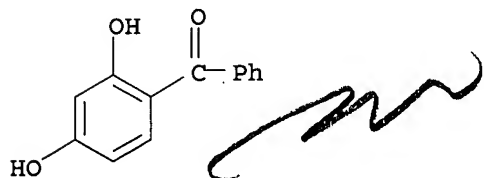
IT 131-56-6, 2,4-Dihydroxybenzophenone

RL: MOA (Modifier or additive use); USES (Uses)

(Sanduvor 3041, Lowilite 24, UV absorber; effects of titania nanoparticle pigments and stabilizers on photooxidative stability of water-based acrylic and isocyanate-based acrylic coatings)

RN 131-56-6 HCAPLUS

CN Methanone, (2,4-dihydroxyphenyl)phenyl- (9CI) (CA INDEX NAME)

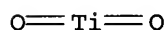


IT 13463-67-7, Titania, uses

RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)

(anatase-type, rutile-type; effects of titania nanoparticle pigments and stabilizers on photooxidative stability of water-based acrylic and isocyanate-based acrylic coatings)

RN 13463-67-7 HCAPLUS

CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)IT 150679-10-0, Acrysol RM 2020 214761-15-6, Bayhydur 3100
229975-48-8, Bayhydrol VP-LS 2235 494798-68-4, Primal AC
337

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(coating; effects of titania nanoparticle pigments and stabilizers on photooxidative stability of water-based acrylic and isocyanate-based acrylic coatings)

RN 150679-10-0 HCAPLUS

CN Acrysol RM 2020 (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 214761-15-6 HCAPLUS

CN Bayhydur 3100 (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 229975-48-8 HCAPLUS

CN Bayhydrol VP-LS 2235 (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 494798-68-4 HCAPLUS

CN Rhoplex AC 337 (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT 120920-26-5, Sanduvor 3051

RL: MOA (Modifier or additive use); USES (Uses)

(light stabilizers; effects of titania nanoparticle pigments and stabilizers on photooxidative stability of water-based acrylic and isocyanate-based acrylic coatings)

RN 120920-26-5 HCAPLUS

CN Sanduvor 3051 (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT 7429-90-5, Aluminum, miscellaneous

RL: MSC (Miscellaneous)

(substrate; effects of titania nanoparticle pigments and stabilizers on photooxidative stability of water-based acrylic and isocyanate-based acrylic coatings)

RN 7429-90-5 HCAPLUS

CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L68 ANSWER 2 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:769632 HCAPLUS

DOCUMENT NUMBER: 137:243427

TITLE: Absorbents of near ultraviolet radiation for preventing purple spots in the lawn

INVENTOR(S): Agata, Kazuichi; Hirokawa, Takashi

PATENT ASSIGNEE(S): Nishinohon Green Research Institute, NGRI, Japan; Dainippon Ink and Chemicals, Inc.

SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

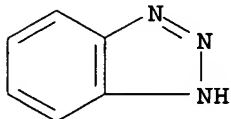
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002293706	A2	20021009	JP 2001-393865	20011226 <--
PRIORITY APPLN. INFO.:			JP 2001-16946	A 20010125 <--
AB	The UV light absorbing compns. (except iron oxide and zinc oxide) that absorb UV light at the wave length 300 - 400 nm, are benzotriazole or titanium oxide with average diameter 0.01 - 0.1 μ m. The compns. also contain coloring agents, surfactants (e.g., silicones), and binding agents.			
IT	13463-67-7, Titanium oxide, biological studies			
	RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)			
	(for preventing purple spots in lawn)			
RN	13463-67-7 HCAPLUS			
CN	Titanium oxide (TiO ₂) (8CI, 9CI) (CA INDEX NAME)			

O=Ti=O

IT 95-14-7D, 1H-Benzotriazole, derivs.
 RL: AGR (Agricultural use); BCP (Biochemical process); BIOL (Biological study); PROC (Process); USES (Uses)
 (for preventing purple spots in lawn)
 RN 95-14-7 HCAPLUS
 CN 1H-Benzotriazole (8CI, 9CI) (CA INDEX NAME)



L68 ANSWER 3 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:790587 HCAPLUS

DOCUMENT NUMBER: 133:351225

TITLE: Stabilized adhesive compositions containing highly soluble, red-shifted, photostable benzotriazole UV absorbers and laminated articles

INVENTOR(S): Renz, Walter; Wood, Mervin Gale; Suhadolnik, Joseph; Ravichandran, Ramanathan; Iyengar, Revathi; Hall, Luther A. R.

PATENT ASSIGNEE(S): Ciba Specialty Chemicals Holding Inc., Switz.

SOURCE: PCT Int. Appl., 93 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000066676	A1	20001109	WO 2000-EP3616	20000420 <--
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
US 6187845	B1	20010213	US 1999-303583	19990503 <--
US 6268415	B1	20010731	US 1999-303582	19990503 <--
CA 2372686	AA	20001109	CA 2000-2372686	20000420 <--
EP 1175467	A1	20020130	EP 2000-927012	20000420 <--
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO			
BR 2000010228	A	20020213	BR 2000-10228	20000420 <--
JP 2002543266	T2	20021217	JP 2000-615702	20000420 <--
AU 767875	B2	20031127	AU 2000-45544	20000420 <--
PRIORITY APPLN. INFO.:			US 1999-303582	A 19990503 <--

US 1999-303583
WO 2000-EP3616

A 19990503 <--
W 20000420 <--

OTHER SOURCE(S): MARPAT 133:351225

AB Adhesive compns. are rendered stable against degradation caused by UV light through the incorporation of selected highly soluble, red-shifted, photostable **benzotriazole** UV absorbers which absorb light strongly in the 350 to 400 nm range. Also suitable are 2-(2-hydroxy-3- α -cumyl-5-tert-octylphenyl)-2H-benzotriazole and 2-(2-hydroxy-3- α -cumyl-5-tert-butylphenyl)-2H-benzotriazole in combination with the red shifted benzotriazoles. The asym. bisbenzotriazoles are useful in a host of applications including automotive coatings, thermoplastics and especially in adhesive compns., themselves useful in solar panels and other laminate structures. All these UV absorbers exhibit excellent photostability and are highly soluble in adhesive formulations. The laminated articles derived from these compns. include, for example, solar control films, films and glazings, UV absorbing glasses and glass coatings, windscreens, retroreflective sheetings and signs, solar reflectors, optical films and the like.

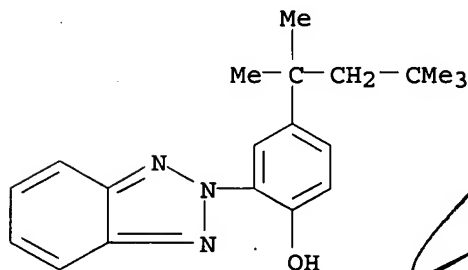
IT 3147-75-9P, 2-(2-Hydroxy-5-tert-octylphenyl)-2H-benzotriazole 3846-71-7P 3864-99-1P, 5-Chloro-2-(2-hydroxy-3,5-di-tert-butylphenyl)-2H-benzotriazole 3896-11-5P 25973-55-1P, 2-(2-Hydroxy-3,5-di-tert-amylphenyl)-2H-benzotriazole 36437-37-3P 70321-86-7P 73936-89-7P 73936-91-1P, 2-(2-Hydroxy-3- α -cumyl-5-tert-octylphenyl)-2H-benzotriazole 102116-79-0P 145233-55-2P 145233-56-3P 207738-63-4P 207738-93-0P 261638-84-0P 261638-86-2P 286471-11-2P 286471-12-3P 286471-14-5P 286471-17-8P 286471-18-9P 286471-19-0P 286471-20-3P 286471-21-4P 286471-25-8P 286471-30-5P 286471-31-6P 286471-32-7P 286471-33-8P 286471-34-9P 286471-36-1P 286471-37-2P 286476-92-4P 305322-06-9P 305322-07-0P 305322-08-1P 305322-09-2P 305322-10-5P 305322-11-6P

RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)

(stabilized adhesive compns. containing highly soluble, red-shifted, photostable **benzotriazole** UV absorbers and laminated articles)

RN 3147-75-9 HCAPLUS

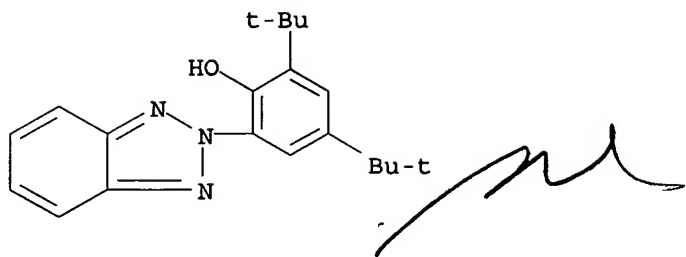
CN Phenol, 2-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)- (7CI, 8CI, 9CI) (CA INDEX NAME)



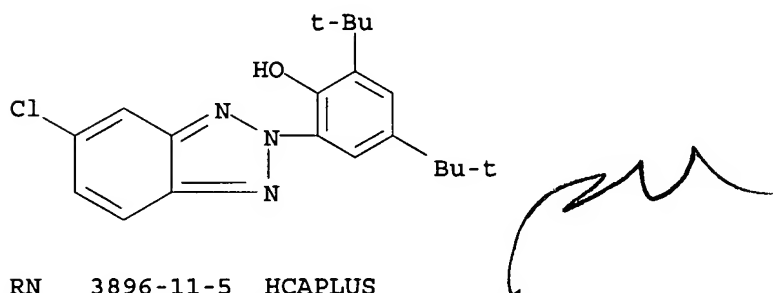
RN 3846-71-7 HCAPLUS

CN Phenol, 2-(2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylethyl)- (9CI) (CA

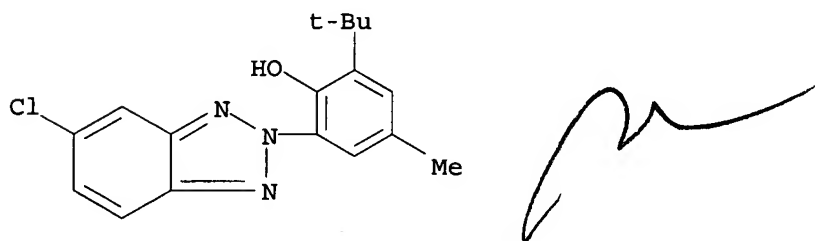
INDEX NAME)



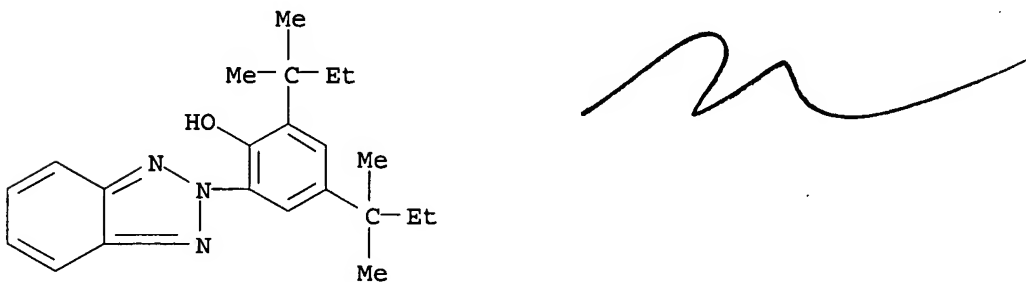
RN 3864-99-1 HCAPLUS

CN Phenol, 2-(5-chloro-2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylethyl)-
(9CI) (CA INDEX NAME)

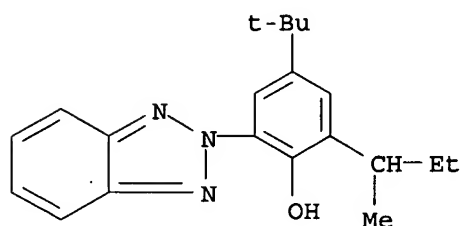
RN 3896-11-5 HCAPLUS

CN Phenol, 2-(5-chloro-2H-benzotriazol-2-yl)-6-(1,1-dimethylethyl)-4-methyl-
(9CI) (CA INDEX NAME)

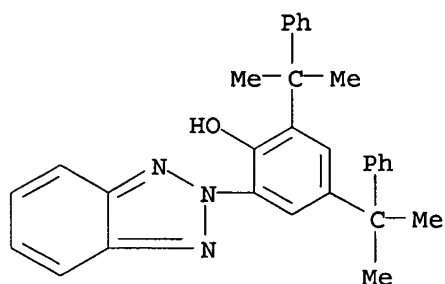
RN 25973-55-1 HCAPLUS

CN Phenol, 2-(2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylpropyl)- (9CI) (CA
INDEX NAME)

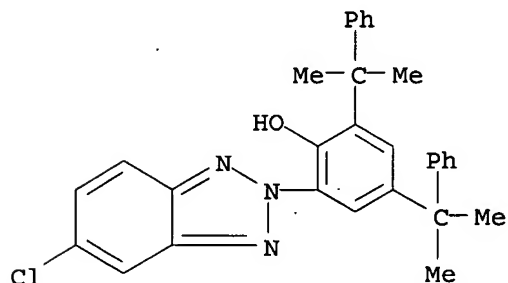
RN 36437-37-3 HCAPLUS
CN Phenol, 2-(2H-benzotriazol-2-yl)-4-(1,1-dimethylethyl)-6-(1-methylpropyl)-
(9CI) (CA INDEX NAME)



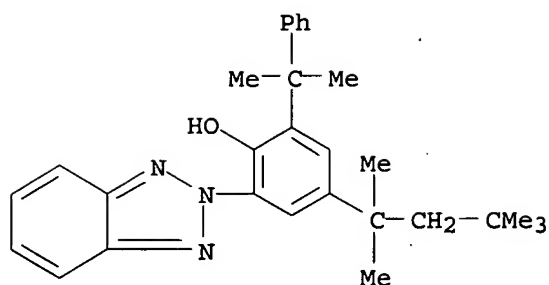
RN 70321-86-7 HCAPLUS
CN Phenol, 2-(2H-benzotriazol-2-yl)-4,6-bis(1-methyl-1-phenylethyl)- (9CI)
(CA INDEX NAME)



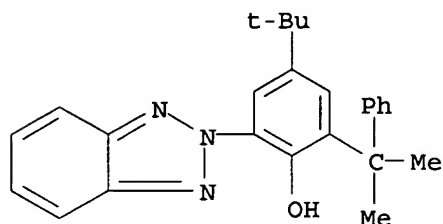
RN 73936-89-7 HCAPLUS
CN Phenol, 2-(5-chloro-2H-benzotriazol-2-yl)-4,6-bis(1-methyl-1-phenylethyl)-
(9CI) (CA INDEX NAME)



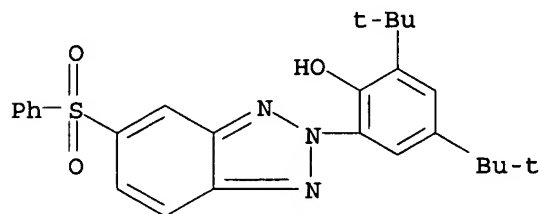
RN 73936-91-1 HCAPLUS
CN Phenol, 2-(2H-benzotriazol-2-yl)-6-(1-methyl-1-phenylethyl)-4-(1,1,3,3-tetramethylbutyl)- (9CI) (CA INDEX NAME)



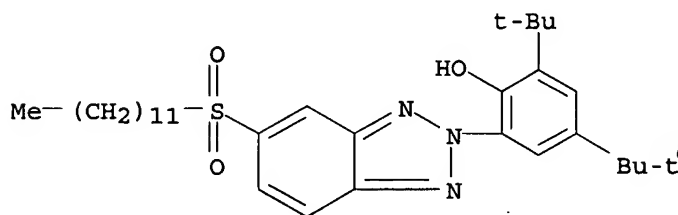
RN 102116-79-0 HCAPLUS
 CN Phenol, 2-(2H-benzotriazol-2-yl)-4-(1,1-dimethylethyl)-6-(1-methyl-1-phenylethyl)- (9CI) (CA INDEX NAME)



RN 145233-55-2 HCAPLUS
 CN Phenol, 2,4-bis(1,1-dimethylethyl)-6-[5-(phenylsulfonyl)-2H-benzotriazol-2-yl]- (9CI) (CA INDEX NAME)

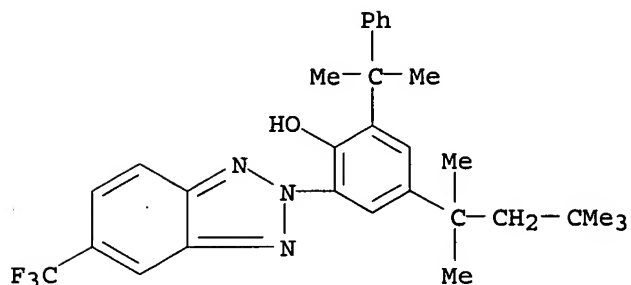


RN 145233-56-3 HCAPLUS
 CN Phenol, 2,4-bis(1,1-dimethylethyl)-6-[5-(dodecylsulfonyl)-2H-benzotriazol-2-yl]- (9CI) (CA INDEX NAME)



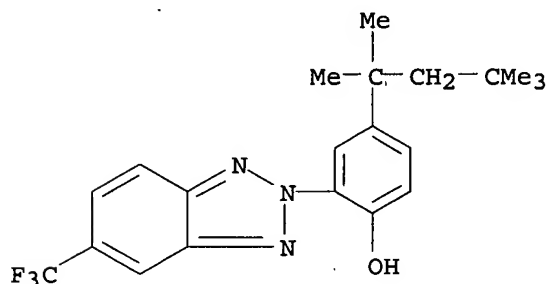
RN 207738-63-4 HCAPLUS
 CN Phenol, 2-(1-methyl-1-phenylethyl)-4-(1,1,3,3-tetramethylbutyl)-6-[5-

(trifluoromethyl)-2H-benzotriazol-2-yl]- (9CI) (CA INDEX NAME)



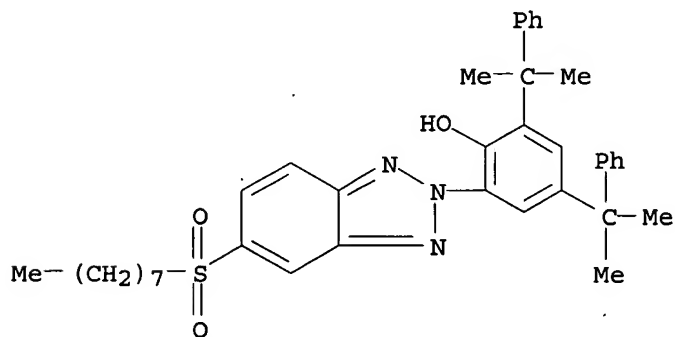
RN 207738-93-0 HCAPLUS

CN Phenol, 4-(1,1,3,3-tetramethylbutyl)-2-[5-(trifluoromethyl)-2H-benzotriazol-2-yl]- (9CI) (CA INDEX NAME)



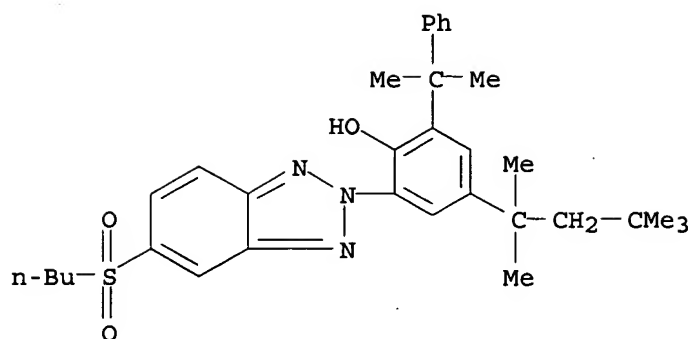
RN 261638-84-0 HCAPLUS

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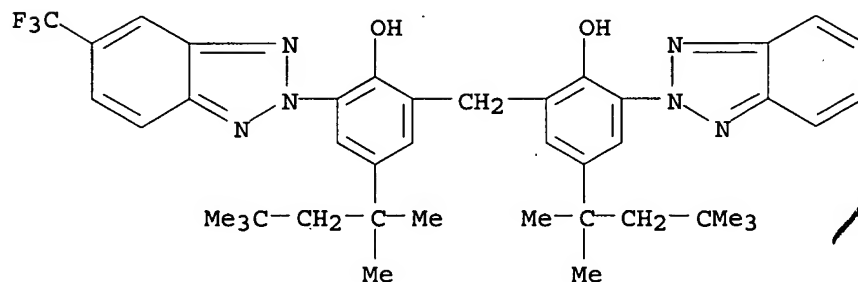
RN 261638-86-2 HCAPLUS

CN Phenol, 2-[5-(butylsulfonyl)-2H-benzotriazol-2-yl]-6-(1-methyl-1-phenylethyl)-4-(1,1,3,3-tetramethylbutyl)- (9CI) (CA INDEX NAME)



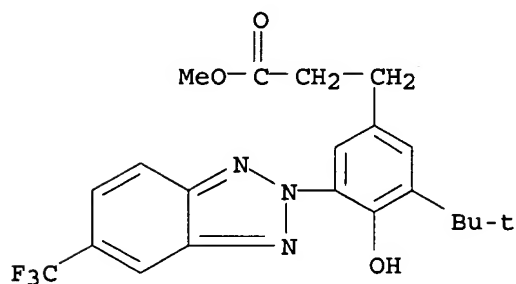
RN 286471-11-2 HCAPLUS

CN Phenol, 2-[[3-(2H-benzotriazol-2-yl)-2-hydroxy-5-(1,1,3,3-tetramethylbutyl)phenyl]methyl]-4-(1,1,3,3-tetramethylbutyl)-6-[5-(trifluoromethyl)-2H-benzotriazol-2-yl]-(9CI) (CA INDEX NAME)



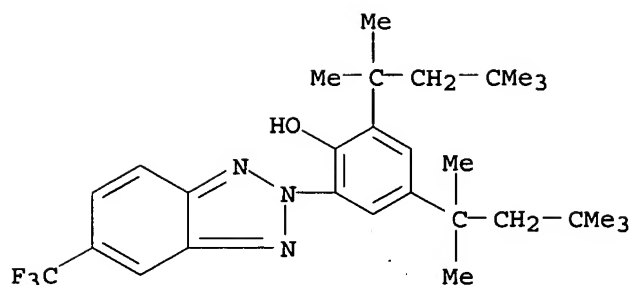
RN 286471-12-3 HCAPLUS

CN Benzenepropanoic acid, 3-(1,1-dimethylethyl)-4-hydroxy-5-[5-(trifluoromethyl)-2H-benzotriazol-2-yl]-, methyl ester (9CI) (CA INDEX NAME)



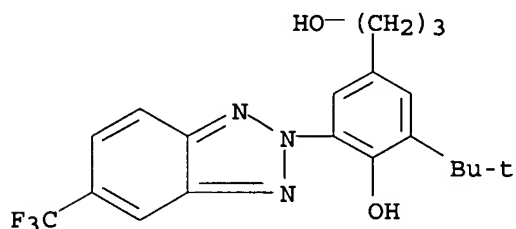
RN 286471-14-5 HCAPLUS

CN Phenol, 2,4-bis(1,1,3,3-tetramethylbutyl)-6-[5-(trifluoromethyl)-2H-benzotriazol-2-yl]-(9CI) (CA INDEX NAME)



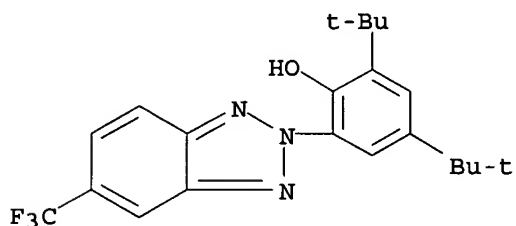
RN 286471-17-8 HCAPLUS

CN Benzenepropanol, 3-(1,1-dimethylethyl)-4-hydroxy-5-[5-(trifluoromethyl)-2H-benzotriazol-2-yl]- (9CI) (CA INDEX NAME)



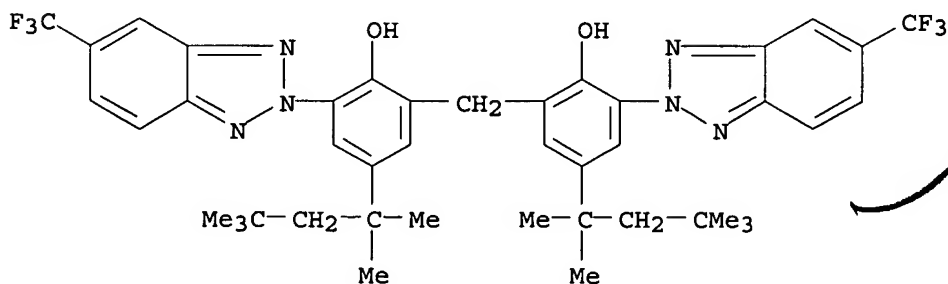
RN 286471-18-9 HCAPLUS

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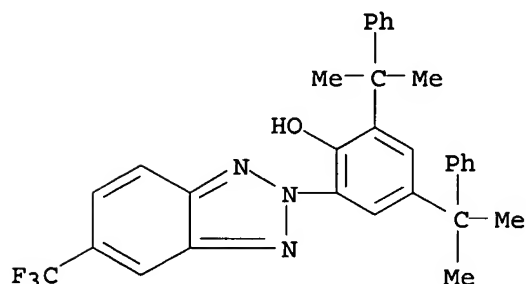
RN 286471-19-0 HCAPLUS

CN Phenol, 2,2'-methylenebis[4-(1,1,3,3-tetramethylbutyl)-6-[5-(trifluoromethyl)-2H-benzotriazol-2-yl]- (9CI) (CA INDEX NAME)



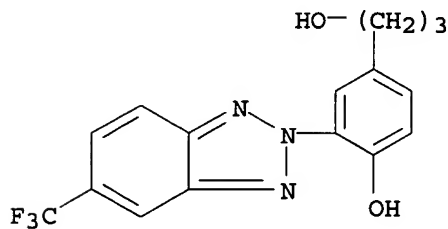
RN 286471-20-3 HCAPLUS

CN Phenol, 2,4-bis(1-methyl-1-phenylethyl)-6-[5-(trifluoromethyl)-2H-benzotriazol-2-yl]- (9CI) (CA INDEX NAME)



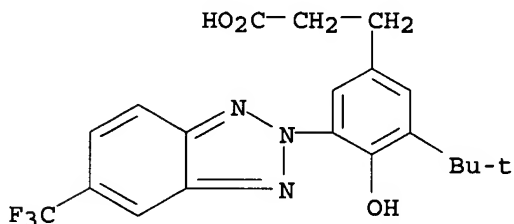
RN 286471-21-4 HCAPLUS

CN Benzenepropanol, 4-hydroxy-3-[5-(trifluoromethyl)-2H-benzotriazol-2-yl]- (9CI) (CA INDEX NAME)



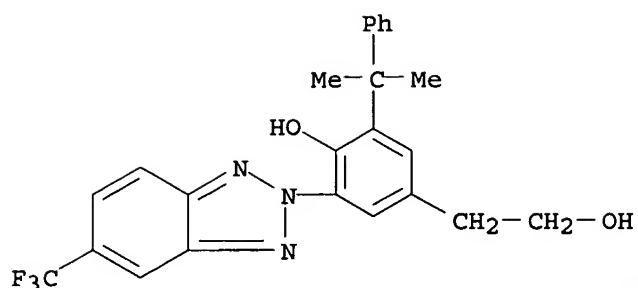
RN 286471-25-8 HCAPLUS

CN Benzenepropanoic acid, 3-(1,1-dimethylethyl)-4-hydroxy-5-[5-(trifluoromethyl)-2H-benzotriazol-2-yl]- (9CI) (CA INDEX NAME)



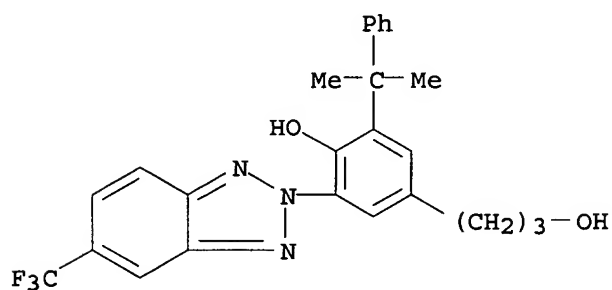
RN 286471-30-5 HCAPLUS

CN Benzeneethanol, 4-hydroxy-3-(1-methyl-1-phenylethyl)-5-[5-(trifluoromethyl)-2H-benzotriazol-2-yl]- (9CI) (CA INDEX NAME)



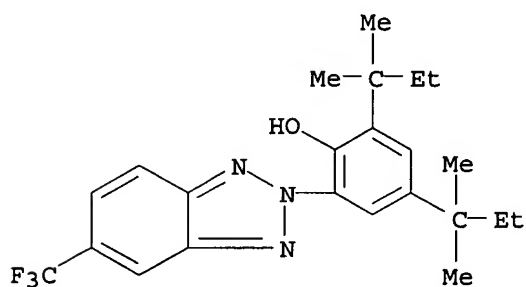
RN 286471-31-6 HCAPLUS

CN Benzenepropanol, 4-hydroxy-3-(1-methyl-1-phenylethyl)-5-[5-(trifluoromethyl)-2H-benzotriazol-2-yl]- (9CI) (CA INDEX NAME)



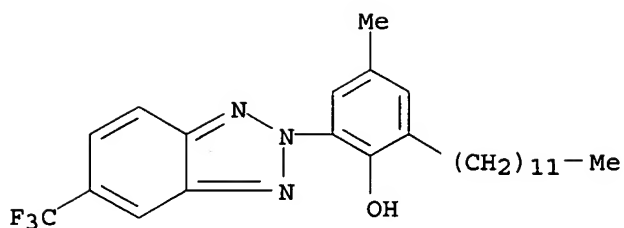
RN 286471-32-7 HCAPLUS

CN Phenol, 2,4-bis(1,1-dimethylpropyl)-6-[5-(trifluoromethyl)-2H-benzotriazol-2-yl]- (9CI) (CA INDEX NAME)

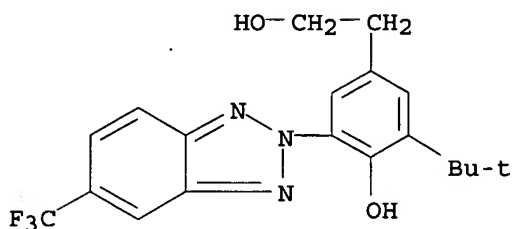


RN 286471-33-8 HCAPLUS

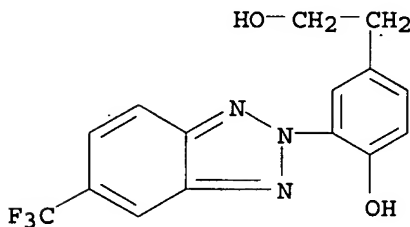
CN Phenol, 2-dodecyl-4-methyl-6-[5-(trifluoromethyl)-2H-benzotriazol-2-yl]- (9CI) (CA INDEX NAME)



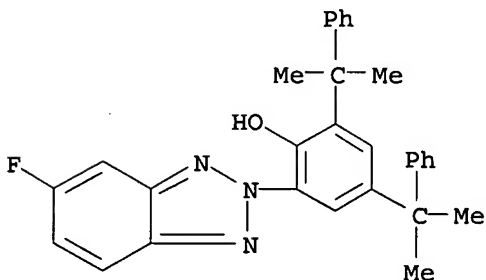
RN 286471-34-9 HCAPLUS
 CN Benzeneethanol, 3-(1,1-dimethylethyl)-4-hydroxy-5-[5-(trifluoromethyl)-2H-benzotriazol-2-yl]- (9CI) (CA INDEX NAME)



RN 286471-36-1 HCAPLUS
 CN Benzeneethanol, 4-hydroxy-3-[5-(trifluoromethyl)-2H-benzotriazol-2-yl]- (9CI) (CA INDEX NAME)

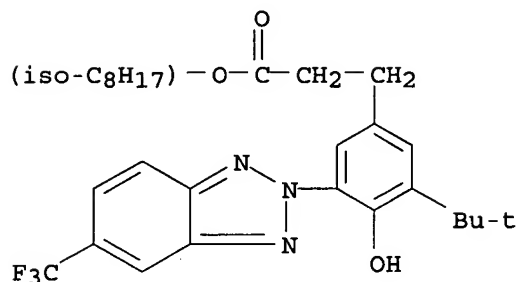


RN 286471-37-2 HCAPLUS
 CN Phenol, 2-(5-fluoro-2H-benzotriazol-2-yl)-4,6-bis(1-methyl-1-phenylethyl)- (9CI) (CA INDEX NAME)



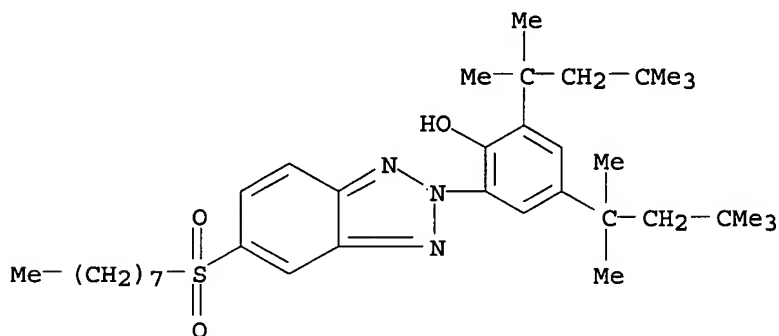
RN 286476-92-4 HCAPLUS
 CN Benzenepropanoic acid, 3-(1,1-dimethylethyl)-4-hydroxy-5-[5-

(trifluoromethyl)-2H-benzotriazol-2-yl]-, isooctyl ester (9CI) (CA INDEX NAME)



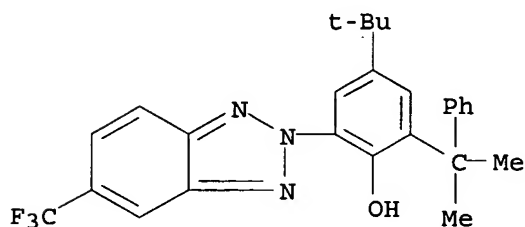
RN 305322-06-9 HCAPLUS

CN Phenol, 2-[5-(octylsulfonyl)-2H-benzotriazol-2-yl]-4,6-bis(1,1,3,3-tetramethylbutyl)- (9CI) (CA INDEX NAME)



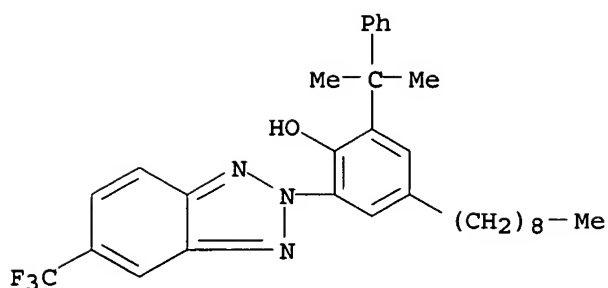
RN 305322-07-0 HCAPLUS

CN Phenol, 4-(1,1-dimethylethyl)-2-(1-methyl-1-phenylethyl)-6-[5-(trifluoromethyl)-2H-benzotriazol-2-yl]- (9CI) (CA INDEX NAME)

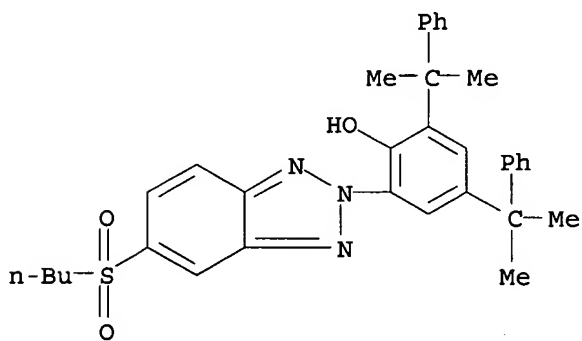


RN 305322-08-1 HCAPLUS

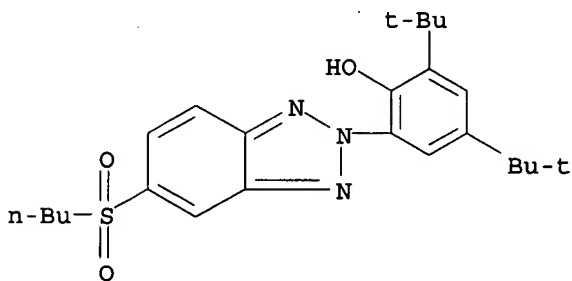
CN Phenol, 2-(1-methyl-1-phenylethyl)-4-nonyl-6-[5-(trifluoromethyl)-2H-benzotriazol-2-yl]- (9CI) (CA INDEX NAME)



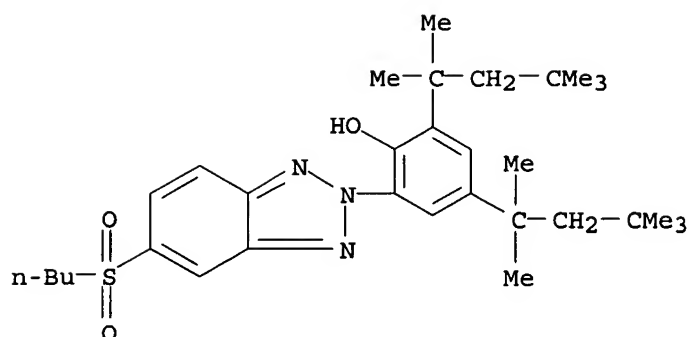
RN 305322-09-2 HCAPLUS
 CN Phenol, 2-[5-(butylsulfonyl)-2H-benzotriazol-2-yl]-4,6-bis(1-methyl-1-phenylethyl)- (9CI) (CA INDEX NAME)



RN 305322-10-5 HCAPLUS
 CN Phenol, 2-[5-(butylsulfonyl)-2H-benzotriazol-2-yl]-4,6-bis(1,1-dimethylethyl)- (9CI) (CA INDEX NAME)



RN 305322-11-6 HCAPLUS
 CN Phenol, 2-[5-(butylsulfonyl)-2H-benzotriazol-2-yl]-4,6-bis(1,1,3,3-tetramethylbutyl)- (9CI) (CA INDEX NAME)



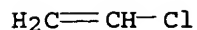
IT 286844-80-2P, DESMODUR N 3390-RK 4037 copolymer
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM
 (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (stabilized adhesive compns. containing highly soluble, red-shifted,
 photostable **benzotriazole** UV absorbers and laminated
 articles)
 RN 286844-80-2 HCAPLUS
 CN Desmodur N 3390, polymer with RK 4037 (9CI) (CA INDEX NAME)
 CM 1
 CRN 286844-79-9
 CMF Unspecified
 CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2
 CRN 96510-63-3
 CMF Unspecified
 CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

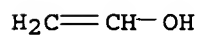
IT 9002-86-2, GEON 27 9002-89-5, Poly(vinyl alcohol)
 9003-07-0, Polypropylene 9003-17-2D, Polybutadiene,
 hydroxyl-terminated 9003-20-7, Poly(vinyl acetate)
 9003-53-6, Polystyrene 9003-55-8D, carboxylated
 9010-77-9 9010-98-4, Polychloroprene 9011-14-7
 , Poly(methyl methacrylate) 24936-68-3, LEXAN 145, uses
 24937-78-8, Ethylene/vinyl acetate copolymer 24968-12-5,
 VALOX 26062-94-2, 1,4-Butanediol-terephthalic acid copolymer
 31074-60-9, GELVA 263 173432-18-3, DELRIN 500PNC10
 RL: POF (Polymer in formulation); TEM (Technical or engineered material
 use); USES (Uses)
 (stabilized adhesive compns. containing highly soluble, red-shifted,
 photostable **benzotriazole** UV absorbers and laminated
 articles)
 RN 9002-86-2 HCAPLUS
 CN Ethene, chloro-, homopolymer (9CI) (CA INDEX NAME)
 CM 1
 CRN 75-01-4
 CMF C2 H3 C1



RN 9002-89-5 HCAPLUS
CN Ethenol, homopolymer (9CI) (CA INDEX NAME)

CM 1

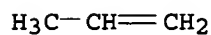
CRN 557-75-5
CMF C2 H4 O



RN 9003-07-0 HCAPLUS
CN 1-Propene, homopolymer (9CI) (CA INDEX NAME)

CM 1

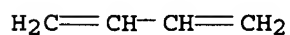
CRN 115-07-1
CMF C3 H6



RN 9003-17-2 HCAPLUS
CN 1,3-Butadiene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0
CMF C4 H6



RN 9003-20-7 HCAPLUS
CN Acetic acid ethenyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

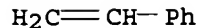
CRN 108-05-4
CMF C4 H6 O2



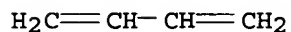
RN 9003-53-6 HCAPLUS
CN Benzene, ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

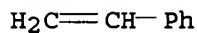
CRN 100-42-5
CMF C8 H8



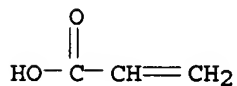
RN 9003-55-8 HCAPLUS
CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)
CM 1
CRN 106-99-0
CMF C4 H6



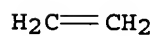
CM 2
CRN 100-42-5
CMF C8 H8



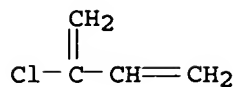
RN 9010-77-9 HCAPLUS
CN 2-Propenoic acid, polymer with ethene (9CI) (CA INDEX NAME)
CM 1
CRN 79-10-7
CMF C3 H4 O2



CM 2
CRN 74-85-1
CMF C2 H4



RN 9010-98-4 HCAPLUS
CN 1,3-Butadiene, 2-chloro-, homopolymer (9CI) (CA INDEX NAME)
CM 1
CRN 126-99-8
CMF C4 H5 Cl



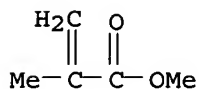
RN 9011-14-7 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

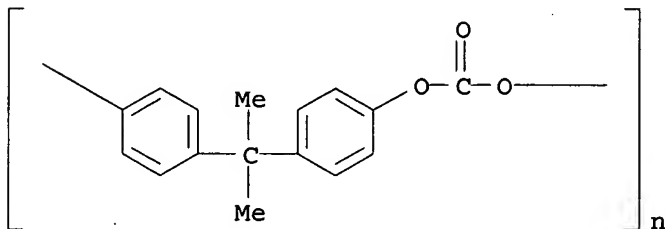
CRN 80-62-6

CMF C5 H8 O2



RN 24936-68-3 HCAPLUS

CN Poly[oxy carbonyloxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 24937-78-8 HCAPLUS

CN Acetic acid ethenyl ester, polymer with ethene (9CI) (CA INDEX NAME)

CM 1

CRN 108-05-4

CMF C4 H6 O2



CM 2

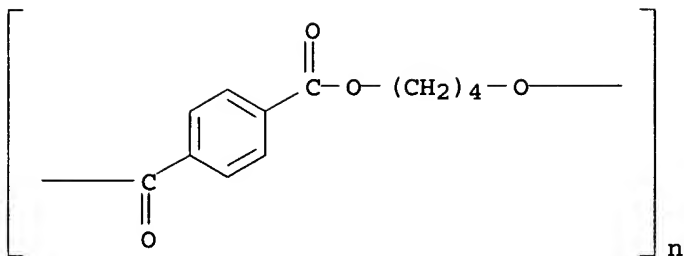
CRN 74-85-1

CMF C2 H4



RN 24968-12-5 HCAPLUS

CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



RN 26062-94-2 HCAPLUS
 CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

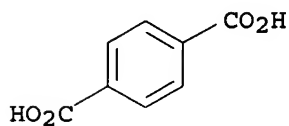
CM 1

CRN 110-63-4
 CMF C4 H10 O2

HO-(CH₂)₄-OH

CM 2

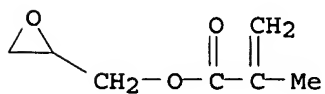
CRN 100-21-0
 CMF C8 H6 O4



RN 31074-60-9 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, oxiranylmethyl ester, polymer with 2-ethylhexyl 2-propenoate, methyl 2-propenoate and 2-propenoic acid (9CI) (CA INDEX NAME)

CM 1

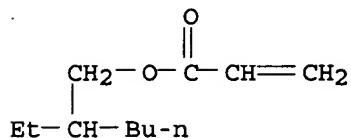
CRN 106-91-2
 CMF C7 H10 O3



CM 2

CRN 103-11-7

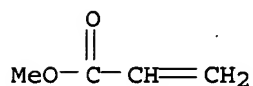
CMF C11 H20 O2



CM 3

CRN 96-33-3

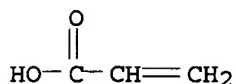
CMF C4 H6 O2



CM 4

CRN 79-10-7

CMF C3 H4 O2



RN 173432-18-3 HCAPLUS

CN Delrin 500PNC10 (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT 50-00-0, Formaldehyde, reactions 111-92-2,

Di-n-butylamine 3287-17-0 305322-12-7

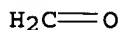
305322-13-8

RL: RCT (Reactant); RACT (Reactant or reagent)

(stabilized adhesive compns. containing highly soluble, red-shifted,
 photostable **benzotriazole** UV absorbers and laminated
 articles)

RN 50-00-0 HCAPLUS

CN Formaldehyde (8CI, 9CI) (CA INDEX NAME)



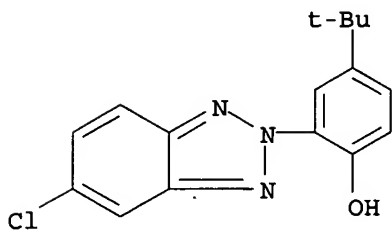
RN 111-92-2 HCAPLUS

CN 1-Butanamine, N-butyl- (9CI) (CA INDEX NAME)



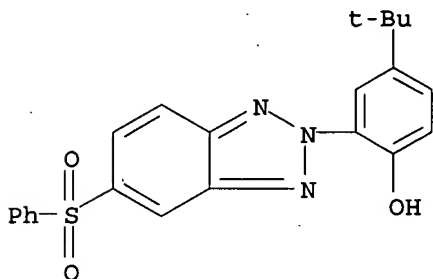
RN 3287-17-0 HCAPLUS

CN Phenol, 2-(5-chloro-2H-benzotriazol-2-yl)-4-(1,1-dimethylethyl)- (9CI)
(CA INDEX NAME)



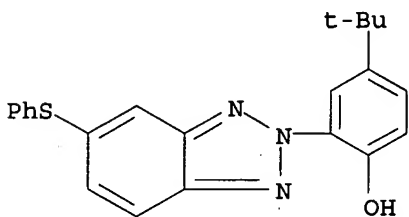
RN 305322-12-7 HCAPLUS

CN Phenol, 4-(1,1-dimethylethyl)-2-[5-(phenylsulfonyl)-2H-benzotriazol-2-yl]- (9CI) (CA INDEX NAME)



RN 305322-13-8 HCAPLUS

CN Phenol, 4-(1,1-dimethylethyl)-2-[5-(phenylthio)-2H-benzotriazol-2-yl]- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L68 ANSWER 4 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1999:676091 HCAPLUS

DOCUMENT NUMBER: 132:4079

TITLE: Chromatographic determination of UV absorbers in car paints

AUTHOR(S): Gennaro, M. C.; Gianotti, V.; Alberi, F.; Angelino, S.; Scagliotti, M.

CORPORATE SOURCE: Dipartimento di Scienze e Tecnologie Avanzate, Università del Piemonte Orientale Amedeo Avogadro, Alessandria, 15100, Italy

SOURCE: Journal of Liquid Chromatography & Related

Technologies (1999), 22(17), 2689-2700

CODEN: JLCTFC; ISSN: 1082-6076

PUBLISHER:

Marcel Dekker, Inc.

DOCUMENT TYPE:

Journal

LANGUAGE:

English

AB Car paints not only must be stable to sunlight effects but also must protect paint sub-layers. For this purpose, the transparent melamine/acrylic paints of recent formulation contain which are able to **absorb UV** radiation. The present work presents a chromatog. method that can be easily applied in industrial labs. for the separation and determination of three **hydroxybenzotriazoles**, com. known as Tinuvin 900, Tinuvin 328, and Tinuvin 1130, widely used as UV absorbers. The method, which involves an extraction process from the polymeric matrix and reversed-phase HPLC determination, is validated with respect to a lab prepared model

paint and applied to com. samples of known and unknown composition

IT 9003-08-1, Melamine resin

RL: AMX (Analytical matrix); TEM (Technical or engineered material use);

ANST (Analytical study); USES (Uses)

(acrylic polymer-; chromatog. determination of **hydroxybenzotriazole**

UV absorbers in automotive finishes based on)

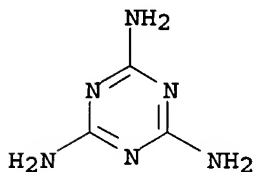
RN 9003-08-1 HCAPLUS

CN 1,3,5-Triazine-2,4,6-triamine, polymer with formaldehyde (9CI) (CA INDEX NAME)

CM 1

CRN 108-78-1

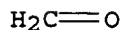
CMF C3 H6 N6



CM 2

CRN 50-00-0

CMF C H2 O



IT 25973-55-1, Tinuvin 328 70321-86-7, Tinuvin 900

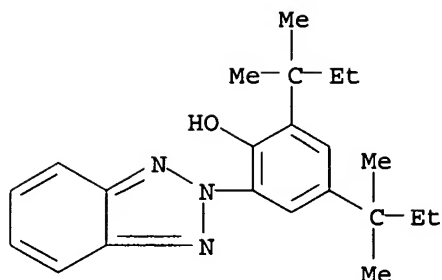
104810-48-2, Tinuvin 1130

RL: ANT (Analyte); MOA (Modifier or additive use); ANST (Analytical study); USES (Uses)

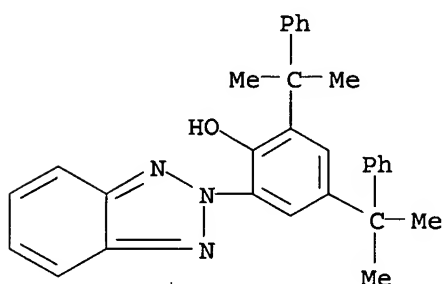
(chromatog. determination of **hydroxybenzotriazole** UV absorbers in automotive finishes)

RN 25973-55-1 HCAPLUS

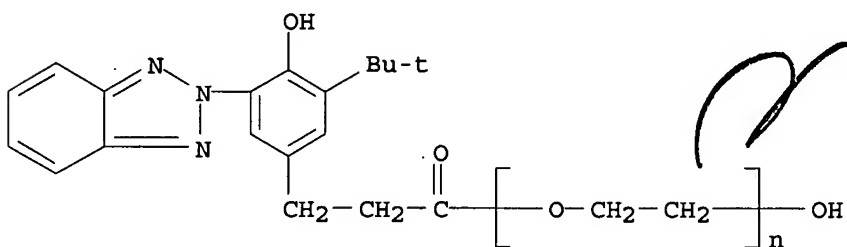
CN Phenol, 2-(2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylpropyl)- (9CI) (CA INDEX NAME)



RN 70321-86-7 HCAPLUS
 CN Phenol, 2-(2H-benzotriazol-2-yl)-4,6-bis(1-methyl-1-phenylethyl)- (9CI)
 (CA INDEX NAME)



RN 104810-48-2 HCAPLUS
 CN Poly(oxy-1,2-ethanediyl), α -[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]- ω -hydroxy- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L68 ANSWER 5 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1998:745042 HCAPLUS

DOCUMENT NUMBER: 130:14576

TITLE: 2,2'-Bis(6-benzotriazolylphenol) compounds, their use as ultraviolet absorbers and copolymers containing them

INVENTOR(S): Nakano, Shinji; Daimon, Emiko; Yamamoto, Minoru; Akada, Mitsuo

PATENT ASSIGNEE(S): Otsuka Chemical Co., Ltd., Japan

SOURCE: PCT Int. Appl., 56 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9850371	A1	19981112	WO 1998-JP2030	19980507 <--
W: CN, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
JP 10306080	A2	19981117	JP 1997-118231	19970508 <--
JP 2963945	B2	19991018		
EP 924203	A1	19990623	EP 1998-919511	19980507 <--
EP 924203	B1	20030205		
R: BE, DE, FR, GB				
CN 1122663	B	20031001	CN 1998-800615	19980507 <--
US 6084104	A	20000704	US 1999-214697	19990108 <--
US 6281313	B1	20010828	US 2000-568705	20000511 <--
PRIORITY APPLN. INFO.:				
			JP 1997-118231	A 19970508 <--
			WO 1998-JP2030	W 19980507 <--
			US 1999-214697	A3 19990108 <--

OTHER SOURCE(S): MARPAT 130:14576

AB The compds. bear reactive (meth)acryloyloxy group on 1 phenol group and other substitution groups, and are polymerizable with other monomers to form copolymers which **absorb UV** lights. Polymer compns. containing the copolymers show no bleeding and loss of UV absorbers. Thus, heating 2-(2'-hydroxy-5'-methylphenyl)-2H-**benzotriazole** with paraformaldehyde and diethylamine in butanol at reflux for 24 h gave 2-(3'-N,N-diethylaminomethyl-2'-hydroxy-5'-methylphenyl)-2H-**benzotriazole** which was then heated with 2-(2'-hydroxy-5'-methacryloyloxyethylphenyl)-2H-**benzotriazole** in the presence of MeONa in MeOH at reflux for 10 h gave 6-(2H-**benzotriazole** -2-yl)-4-methacryloyloxyethyl-2-[3'-(2H-**benzotriazole** -2-yl)-2'-hydroxy-5'-methylphenyl]methylphenol (I). Dissolving 70 parts a PMMA with 30 parts a copolymer derived from I and Me methacrylate in 500 parts tetrachloroethane and coating the resulting solution on a surface gave a film with good resistance to UV light.

IT 215998-18-8P 215998-19-9P 215998-20-2P

215998-21-3P 215998-22-4P 216168-90-0P

RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PRP (Properties); PREP (Preparation); USES (Uses)

(UV stabilizers; manufacture of non-bleeding UV stabilizers for coatings)

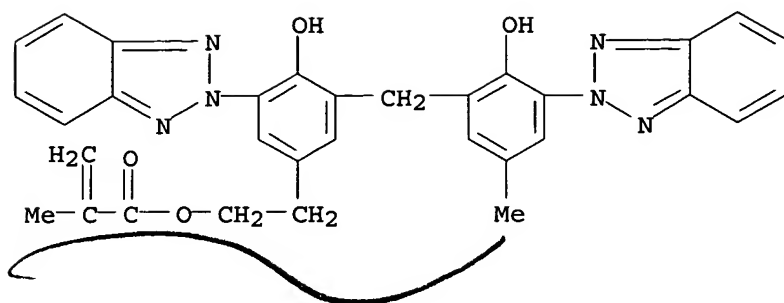
RN 215998-18-8 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[3-(2H-benzotriazol-2-yl)-5-[[3-(2H-benzotriazol-2-yl)-2-hydroxy-5-methylphenyl]methyl]-4-hydroxyphenyl]ethyl ester, polymer with methyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 215998-14-4

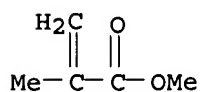
CMF C32 H28 N6 O4



CM 2

CRN 80-62-6

CMF C5 H8 O2



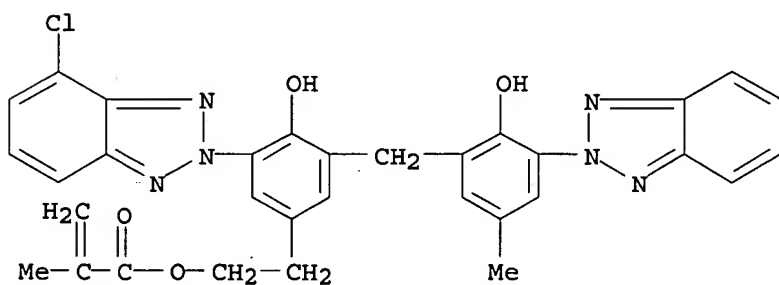
RN 215998-19-9 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[3-[[3-(2H-benzotriazol-2-yl)-2-hydroxy-5-methylphenyl]methyl]-5-(4-chloro-2H-benzotriazol-2-yl)-4-hydroxyphenyl]ethyl ester, polymer with methyl 2-methyl-2-propenoate (9CI)
(CA INDEX NAME)

CM 1

CRN 215998-15-5

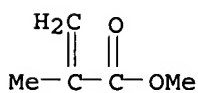
CMF C32 H27 Cl N6 O4



CM 2

CRN 80-62-6

CMF C5 H8 O2



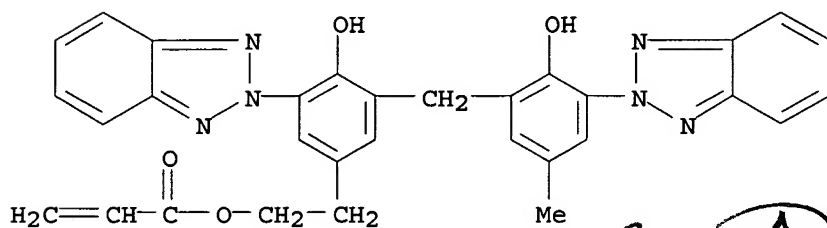
RN 215998-20-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with
2-[3-(2H-benzotriazol-2-yl)-5-[[3-(2H-benzotriazol-2-yl)-2-hydroxy-5-
methylphenyl]methyl]-4-hydroxyphenyl]ethyl 2-propenoate (9CI) (CA INDEX
NAME)

CM 1

CRN 215998-16-6

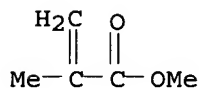
CMF C31 H26 N6 O4



CM 2

CRN 80-62-6

CMF C5 H8 O2



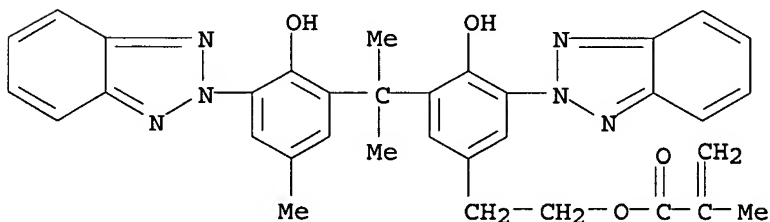
RN 215998-21-3 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[3-(2H-benzotriazol-2-yl)-5-[1-[3-(2H-
benzotriazol-2-yl)-2-hydroxy-5-methylphenyl]-1-methylethyl]-4-
hydroxyphenyl]ethyl ester, polymer with methyl 2-methyl-2-propenoate (9CI)
(CA INDEX NAME)

CM 1

CRN 215998-17-7

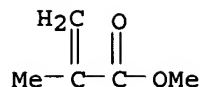
CMF C34 H32 N6 O4



CM 2

CRN 80-62-6

CMF C5 H8 O2



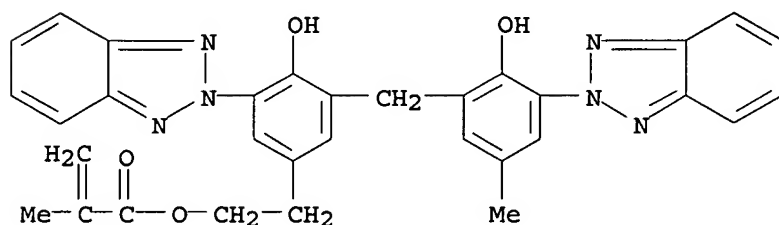
RN 215998-22-4 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[3-(2H-benzotriazol-2-yl)-5-[[3-(2H-benzotriazol-2-yl)-2-hydroxy-5-methylphenyl]methyl]-4-hydroxyphenyl]ethyl ester, polymer with N,N-di-2-propenyl-2-propen-1-amine, 2-ethylhexyl 2-propenoate, methyl 2-methyl-2-propenoate and 2-propenoic acid (9CI) (CA INDEX NAME)

CM 1

CRN 215998-14-4

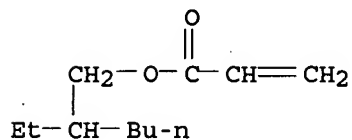
CMF C32 H28 N6 O4



CM 2

CRN 103-11-7

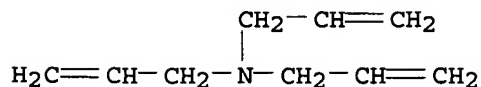
CMF C11 H20 O2



CM 3

CRN 102-70-5

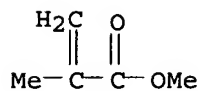
CMF C9 H15 N



CM 4

CRN 80-62-6

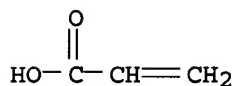
CMF C5 H8 O2



CM 5

CRN 79-10-7

CMF C3 H4 O2



RN 216168-90-0 HCAPLUS

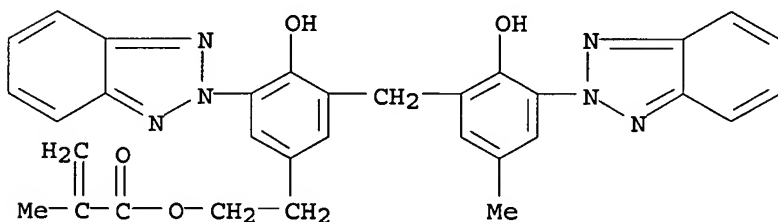
CN 2-Propenoic acid, 2-methyl-, 2-[3-(2H-benzotriazol-2-yl)-5-[[3-(2H-benzotriazol-2-yl)-2-hydroxy-5-methylphenyl]methyl]-4-hydroxyphenyl]methylethyl ester, polymer with methyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 216163-57-4

CMF C33 H30 N6 O4

CCI IDS

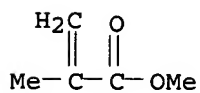


D1-Me

CM 2

CRN 80-62-6

CMF C5 H8 O2

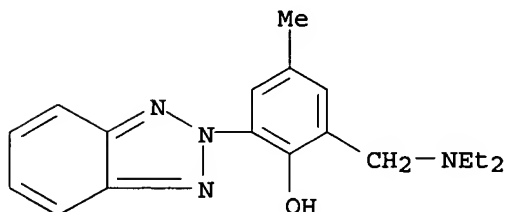


IT 103597-49-5P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; reaction in manufacture of reactive UV stabilizers for plastics)

RN 103597-49-5 HCAPLUS

CN Phenol, 2-(2H-benzotriazol-2-yl)-6-[(diethylamino)methyl]-4-methyl- (9CI)
(CA INDEX NAME)



IT 9011-14-7, PMMA 215998-23-5, Art Resin UN

3320HA-dipentaerythritol hexaacrylate-pentaerythritol tetraacrylate copolymer

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(manufacture of non-bleeding UV stabilizers for coatings)

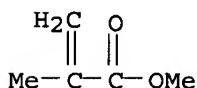
RN 9011-14-7 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 80-62-6

CMF C5 H8 O2



RN 215998-23-5 HCAPLUS

CN 2-Propenoic acid, 2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester, polymer with Art Resin UN 3320HA and 2-[[3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]propoxy]methyl]-2-[[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 149531-40-8

CMF Unspecified

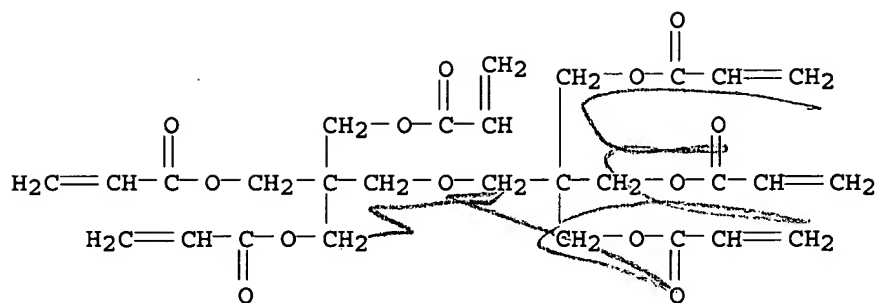
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 29570-58-9

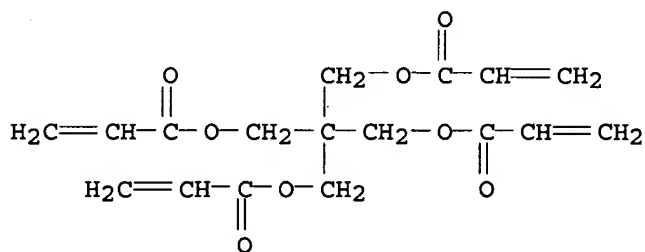
CMF C28 H34 O13



CM 3

CRN 4986-89-4

CMF C17 H20 O8



IT 2440-22-4 96478-09-0 96549-96-1

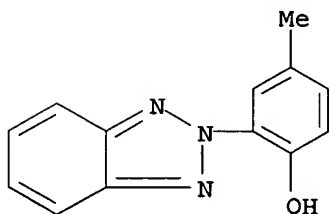
170103-27-2 216163-56-3

RL: RCT (Reactant); RACT (Reactant or reagent)

(reactant; reaction in manufacture of reactive UV stabilizers for plastics)

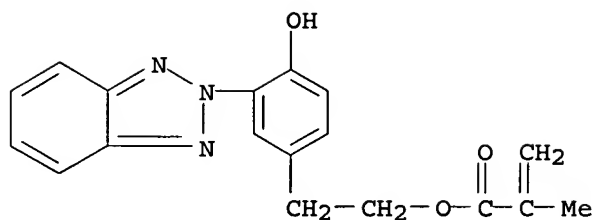
RN 2440-22-4 HCAPLUS

CN Phenol, 2-(2H-benzotriazol-2-yl)-4-methyl- (9CI) (CA INDEX NAME)



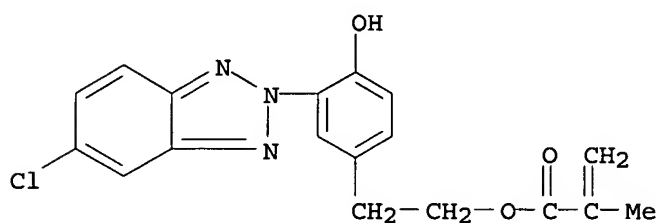
RN 96478-09-0 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[3-(2H-benzotriazol-2-yl)-4-hydroxyphenyl]ethyl ester (9CI) (CA INDEX NAME)



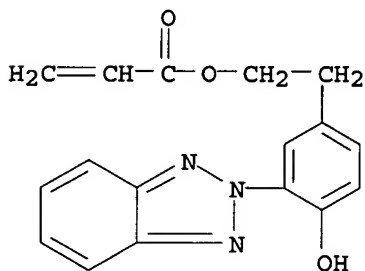
RN 96549-96-1 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[3-(5-chloro-2H-benzotriazol-2-yl)-4-hydroxyphenyl]ethyl ester (9CI) (CA INDEX NAME)



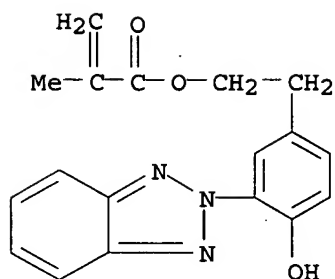
RN 170103-27-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[3-(2H-benzotriazol-2-yl)-4-hydroxyphenyl]ethyl ester (9CI) (CA INDEX NAME)



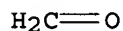
RN 216163-56-3 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[3-(2H-benzotriazol-2-yl)-4-hydroxyphenyl]methylethyl ester (9CI) (CA INDEX NAME)



D1-Me

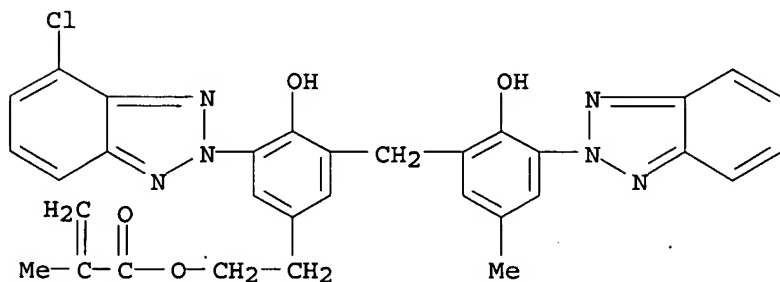
IT 50-00-0, Formaldehyde, reactions 109-89-7, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction in manufacture of reactive UV stabilizers for plastics)
 RN 50-00-0 HCAPLUS
 CN Formaldehyde (8CI, 9CI) (CA INDEX NAME)



RN 109-89-7 HCAPLUS
 CN Ethanamine, N-ethyl- (9CI) (CA INDEX NAME)

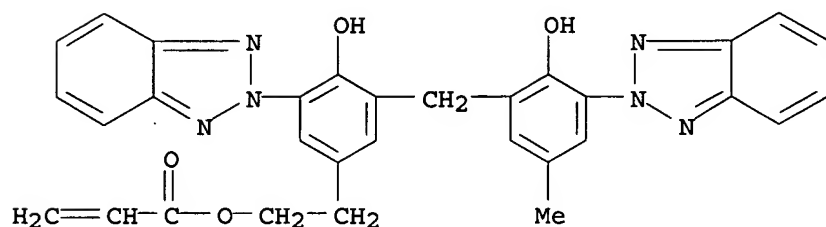


IT 215998-15-5P 215998-16-6P 215998-17-7P
 216163-57-4P
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT
 (Reactant or reagent)
 (reactive UV stabilizers; manufacture of non-bleeding UV stabilizers for
 coatings)
 RN 215998-15-5 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, 2-[3-[[3-(2H-benzotriazol-2-yl)-2-hydroxy-5-
 methylphenyl]methyl]-5-(4-chloro-2H-benzotriazol-2-yl)-4-
 hydroxyphenyl]ethyl ester (9CI) (CA INDEX NAME)



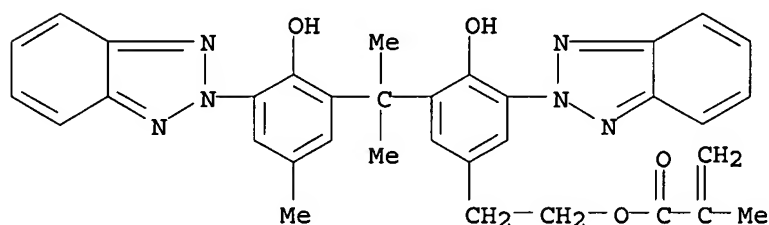
RN 215998-16-6 HCAPLUS
 CN 2-Propenoic acid, 2-[3-(2H-benzotriazol-2-yl)-5-[[3-(2H-benzotriazol-2-yl)-

2-hydroxy-5-methylphenyl]methyl]-4-hydroxyphenyl]ethyl ester (9CI) (CA INDEX NAME)



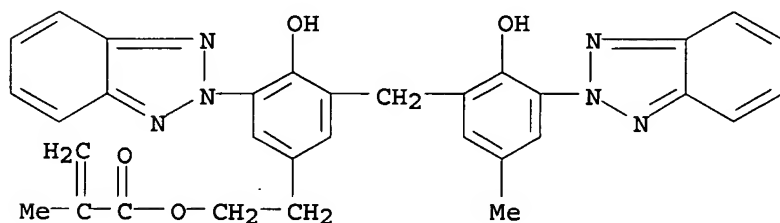
RN 215998-17-7 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[3-(2H-benzotriazol-2-yl)-5-[1-[3-(2H-benzotriazol-2-yl)-2-hydroxy-5-methylphenyl]-1-methylethyl]-4-hydroxyphenyl]ethyl ester (9CI) (CA INDEX NAME)



RN 216163-57-4 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[3-(2H-benzotriazol-2-yl)-5-[1-[3-(2H-benzotriazol-2-yl)-2-hydroxy-5-methylphenyl]methyl]-4-hydroxyphenyl]methylethyl ester (9CI) (CA INDEX NAME)



D1-Me

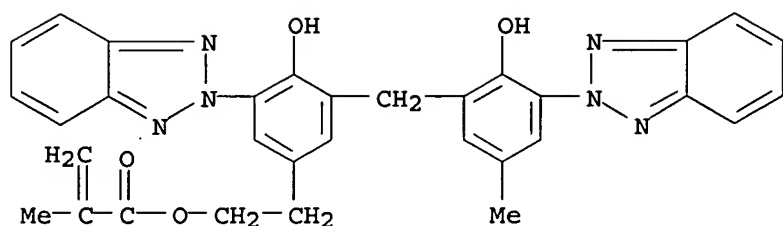
IT 215998-14-4P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(reactive UV stabilizers; reaction in manufacture of reactive UV stabilizers for plastics)

RN 215998-14-4 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[3-(2H-benzotriazol-2-yl)-5-[1-[3-(2H-benzotriazol-2-yl)-2-hydroxy-5-methylphenyl]methyl]-4-hydroxyphenyl]ethyl ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L68 ANSWER 6 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1997:544277 HCAPLUS

DOCUMENT NUMBER: 127:183357

TITLE: Reversible thermal recording medium and its production method

INVENTOR(S): Yuyama, Take; Tsutsui, Kyoji

PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09207437	A2	19970812	JP 1996-40296	19960205 <--
PRIORITY APPLN. INFO.:			JP 1996-40296	19960205 <--

AB A reversible thermal recording medium is provided on a support with (1) a recording layer containing an electron-donating coloring compound and an electron-accepting compound as the main components and capable of forming the relative state of coloration and discoloration based on the difference in a heating temperature and/or cooling rate after heating and (2) a protective layer containing a polymer possessing a structure absorbing UV light of 300-360 nm. The UV-absorbing structure is a **benzotriazole** structure. A resin used together with the polymer to form the protective layer does not **absorb** UV light and consists of a UV-curing resin. The reversible thermal recording medium is manufactured by reacting the UV-curing resin with a UV-absorbing agent possessing a polymerizable group during the coating process. This rewritable thermal recording medium is capable of forming and erasing color images of high contrast by controlling thermal energy, satisfactory in thermal, moisture, and light resistance without compromising other characteristics such as thermal sensitivity, maintains stable coloration and discoloration property in repeated cycles of recording and erasing for a long period time, and provides a high mech. strength.

IT 96478-13-6 153175-43-0 176163-48-7

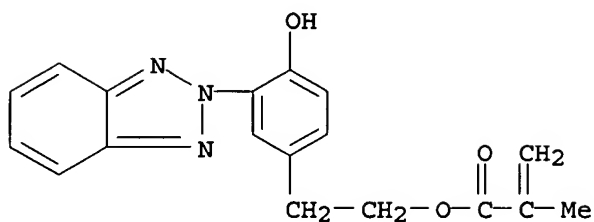
RL: TEM (Technical or engineered material use); USES (Uses)
(UV-absorbing agent; reversible thermal recording medium with protective layer containing **benzotriazole**-containing polymer as UV-absorbing agents and its production method)

RN 96478-13-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[3-(2H-benzotriazol-2-yl)-4-hydroxyphenyl]ethyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

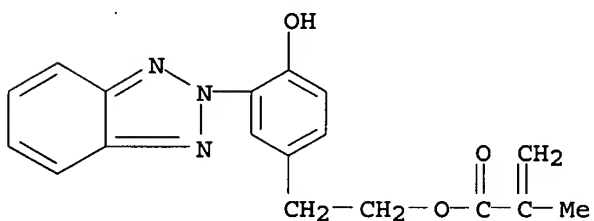
CRN 96478-09-0
CMF C18 H17 N3 O3



RN 153175-43-0 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-[3-(2H-benzotriazol-2-yl)-4-hydroxyphenyl]ethyl ester, polymer with methyl 2-methyl-2-propenoate (9CI)
(CA INDEX NAME)

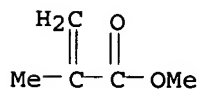
CM 1

CRN 96478-09-0
CMF C18 H17 N3 O3



CM 2

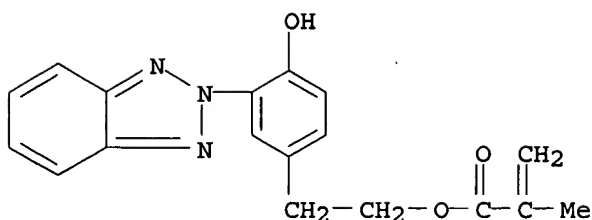
CRN 80-62-6
CMF C5 H8 O2



RN 176163-48-7 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-[3-(2H-benzotriazol-2-yl)-4-hydroxyphenyl]ethyl ester, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

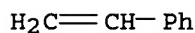
CRN 96478-09-0
CMF C18 H17 N3 O3



CM 2

CRN 100-42-5

CMF C8 H8



IT 9003-22-9, Vinyl chloride-vinyl acetate copolymer

59129-79-2 80417-62-5, Docosylphosphonic acid

RL: TEM (Technical or engineered material use); USES (Uses)

(reversible thermal recording medium with protective layer containing
benzotriazole-containing polymer as UV-absorbing agents and its
production method)

RN 9003-22-9 HCAPLUS

CN Acetic acid ethenyl ester, polymer with chloroethene (9CI) (CA INDEX
NAME)

CM 1

CRN 108-05-4

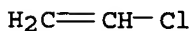
CMF C4 H6 O2



CM 2

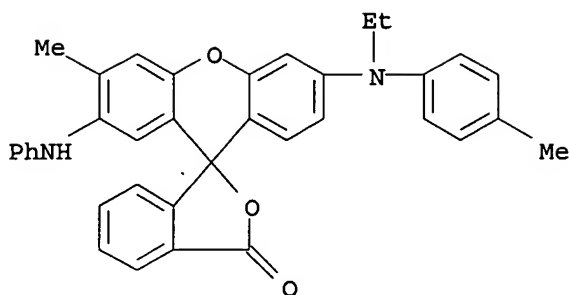
CRN 75-01-4

CMF C2 H3 Cl



RN 59129-79-2 HCAPLUS

CN Spiro[isobenzofuran-1(3H), 9'-[9H]xanthen]-3-one, 6'-[ethyl (4-
methylphenyl) amino]-3'-methyl-2'-(phenylamino)- (9CI) (CA INDEX NAME)



RN 80417-62-5 HCAPLUS
 CN Phosphonic acid, docosyl- (9CI) (CA INDEX NAME)

$\text{H}_2\text{O}_3\text{P}-(\text{CH}_2)_{21}-\text{Me}$

L68 ANSWER 7 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1996:9986 HCAPLUS

DOCUMENT NUMBER: 124:59179

TITLE: Measurements of chemical change rates to select superior automotive clearcoats

AUTHOR(S): Gerlock, J. L.; Smith, C. A.; Nunez, E. M.; Cooper, V. A.; Liscombe, P.; Cummings, D. R.; Dusibiber, T. G.

CORPORATE SOURCE: Food Res. Lab., Ford Motor Company, Dearborn, MI, 48121-2053, USA

SOURCE: Advances in Chemistry Series (1996), 249(Polymer Durability), 335-47

CODEN: ADCSAJ; ISSN: 0065-2393

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Hydroperoxide concentration behavior measurements and transmission FTIR spectroscopy measurements were used to compare the photooxidn. resistance of three acrylic-melamine clearcoats. UV spectroscopy was used to compare the longevity of additives that absorb UV light for the same clearcoats. Samples were subjected to SAE J1960 JUN89 xenon-arc accelerated exposure. No dramatic difference in clearcoat photooxidative degradation rate was found, but dramatic differences in UV light absorber longevity were found. Paint systems based on the clearcoat that exhibits poor UV light absorber longevity exhibited poor Florida weathering performance.

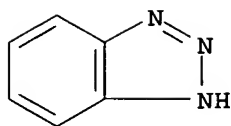
IT 95-14-7D, 1H-Benzotriazole, derivs.

RL: MOA (Modifier or additive use); USES (Uses)

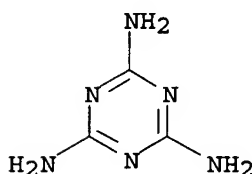
(UV absorbers; photooxidative degradation of automotive clearcoats as measured by hydroperoxide)

RN 95-14-7 HCAPLUS

CN 1H-Benzotriazole (8CI, 9CI) (CA INDEX NAME)



IT 9003-08-1, Formaldehyde-melamine copolymer
 RL: PRP (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (photooxidative degradation of automotive clearcoats as measured by
 hydroperoxide)
 RN 9003-08-1 HCAPLUS
 CN 1,3,5-Triazine-2,4,6-triamine, polymer with formaldehyde (9CI) (CA INDEX
 NAME)
 CM 1
 CRN 108-78-1
 CMF C3 H6 N6



CM 2
 CRN 50-00-0
 CMF C H2 O

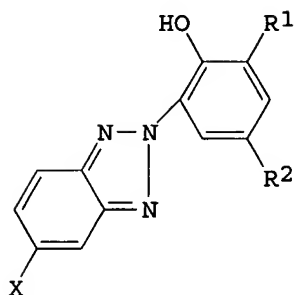
H₂C=O

L68 ANSWER 8 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1988:591579 HCAPLUS
 DOCUMENT NUMBER: 109:191579
 TITLE: Improving the light stability of UV-curable polymer
 compositions without impairing their curing properties
 INVENTOR(S): Ueda, Masahiro; Sakiyama, Kazuo
 PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63092607	A2	19880423	JP 1986-238286	19861007 <--
PRIORITY APPLN. INFO.:			JP 1986-238286	19861007 <--

OTHER SOURCE(S) :
GI

MARPAT 109:191579



I

AB Title compns. are stabilized by addition of **benzotriazoles I** (X = H, Cl; R1-2 = C1-8 alkyl) to **absorb** the **UV** components of sunlight and indoor lighting without blocking the output of UV lamps. Thus, a UV-curable composition containing epoxy acrylates 10,

trimethylolpropane

triacylate 50, neopentyl glycol diacrylate 40, and 2-methyl-2-hydroxypropionophenone 7 parts was mixed with 0.05 part 2-(2'-hydroxy-3'-tert-butyl-5'-methylphenyl)**benzotriazole** (II). This composition showed no gelation after 10 days under indoor light, although it gelled within 1 day without the II. A 6- μ m film of the II-containing composition showed no tack after irradiation by a high-pressure Hg lamp.

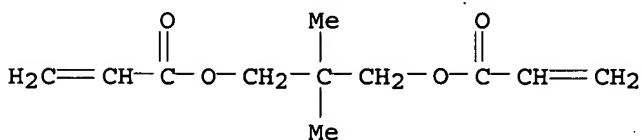
IT 2223-82-7, Neopentylglycol diacrylate 15625-89-5, Trimethylolpropane triacylate

RL: USES (Uses)

(UV-curable compns. containing, light stabilizers for, **benzotriazoles** as)

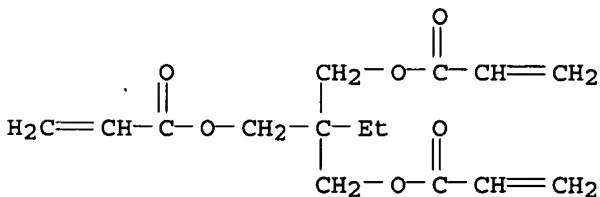
RN 2223-82-7 HCAPLUS

CN 2-Propenoic acid, 2,2-dimethyl-1,3-propanediyl ester (9CI) (CA INDEX NAME)

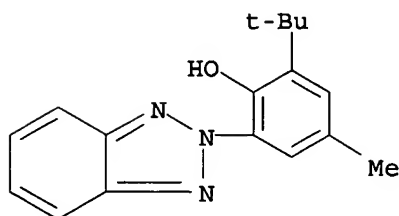


RN 15625-89-5 HCAPLUS

CN 2-Propenoic acid, 2-ethyl-2-[[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (9CI) (CA INDEX NAME)



IT 23939-33-5
 RL: USES (Uses)
 (light stabilizers, for UV-curable compns.)
 RN 23939-33-5 HCAPLUS
 CN Phenol, 2-(2H-benzotriazol-2-yl)-6-(1,1-dimethylethyl)-4-methyl- (9CI)
 (CA INDEX NAME)

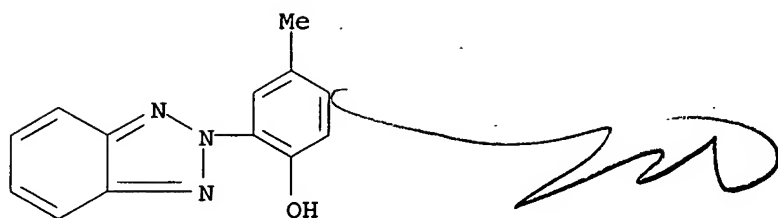


L68 ANSWER 9 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1987:618822 HCAPLUS
 DOCUMENT NUMBER: 107:218822
 TITLE: Plastic cover sheets for greenhouses
 INVENTOR(S): Hatachi, Toshihiko; Tanaka, Katsuhisa; Kinoshita, Naohiko
 PATENT ASSIGNEE(S): Mitsubishi Kasei Vinyl K. K., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

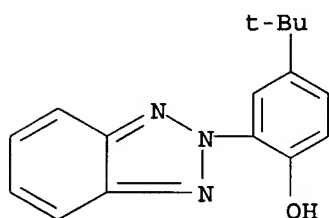
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62104525	A2	19870515	JP 1986-80384	19860408 <--
PRIORITY APPLN. INFO.:			JP 1986-80384	19860408 <--

AB Sheets 0.01-5 mm thick, which **absorb UV** and convert it to longer wavelengths usable by certain plants, contain 0.01-3% UV absorbers and have outer layer containing 0.01-8% fluorescent substances. Thus, 100 g 40% PhMe solution of acrylic resin (Acrynal 90) and 0.87 g fluorescent coumarin derivative (I) was coated (dry weight 10 g/m²) on a 0.1-mm PVC film containing DOP 50, tricresyl phosphate 5, Ba/Zn stabilizer 3, and 2-(2-hydroxy-5-methylphenyl)benzotriazole (II) 0.1 phr. The coated film had fluorescent emission peak intensity 300 and a slight yellow color but no loss of flexibility after 200 h in a Weatherometer; vs. 300, brown, and embrittled, resp., for an uncoated film containing I instead of II. An uncoated film containing both I and II showed no fluorescent emission.

IT 2440-22-4 3147-76-0
 RL: USES (Uses)
 (UV absorbers, in UV-converting films for greenhouse covers)
 RN 2440-22-4 HCAPLUS
 CN Phenol, 2-(2H-benzotriazol-2-yl)-4-methyl- (9CI) (CA INDEX NAME)



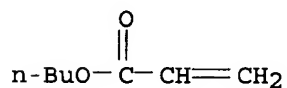
RN 3147-76-0 HCAPLUS
 CN Phenol, 2-(2H-benzotriazol-2-yl)-4-(1,1-dimethylethyl)- (9CI) (CA INDEX NAME)



IT 111458-54-9
 RL: USES (Uses)
 (coatings, fluorescent, for UV-converting films for greenhouse covers)
 RN 111458-54-9 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, polymer with butyl 2-propenoate, ethyl 2-methyl-2-propenoate and methyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

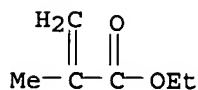
CM 1

CRN 141-32-2
 CMF C7 H12 O2



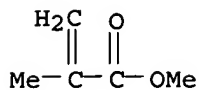
CM 2

CRN 97-63-2
 CMF C6 H10 O2



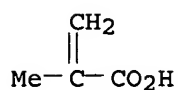
CM 3

CRN 80-62-6
CMF C5 H8 O2




CM 4

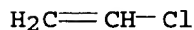
CRN 79-41-4
CMF C4 H6 O2



IT 9002-86-2, PVC 9002-88-4 24937-78-8,
Ethylene-vinyl acetate copolymer
RL: USES (Uses)
(films, UV-converting, for covering greenhouses)
RN 9002-86-2 HCAPLUS
CN Ethene, chloro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

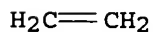
CRN 75-01-4
CMF C2 H3 Cl



RN 9002-88-4 HCAPLUS
CN Ethene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 74-85-1
CMF C2 H4



RN 24937-78-8 HCAPLUS
CN Acetic acid ethenyl ester, polymer with ethene (9CI) (CA INDEX NAME)

CM 1

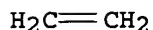
CRN 108-05-4
CMF C4 H6 O2



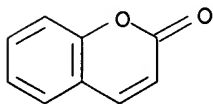
CM 2

CRN 74-85-1

CMF C2 H4



IT 91-64-5D, derivs.
 RL: USES (Uses)
 (in fluorescent coatings for UV-converting films for greenhouse covers)
 RN 91-64-5 HCAPLUS
 CN 2H-1-Benzopyran-2-one (9CI) (CA INDEX NAME)



L68 ANSWER 10 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1984:463550 HCAPLUS
 DOCUMENT NUMBER: 101:63550
 TITLE: The prevention of fading and discoloration of color
 hard copies by UV absorbers
 AUTHOR(S): Anon.
 CORPORATE SOURCE: UK
 SOURCE: Research Disclosure (1984), 242, 284-5 (No.
 24239)
 CODEN: RSDSBB; ISSN: 0374-4353
 DOCUMENT TYPE: Journal; Patent
 LANGUAGE: English
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RD 242039		19840610		
PRIORITY APPLN. INFO.:			RD 1984-242039	1984061

0

AB Color images produced by electrog., electrophotog., thermal recording, ink-jet printing, imaging systems based on dye transfer, photoimaging, and the like are protected against discoloration by light by UV absorbers which **absorb** strongly in the 300-400 nm region and are transparent to visible light. The substances, which can be incorporated into the imaging compns., protective overcoatings, image receptor surfaces, and the like, comprise **benzophenone** derivs., **benzotriazoles**, benzyldiene malonates, salicylates, monobenzoates, oxamides, and others.

IT 95-14-7D, derivs. 118-55-8 119-61-9D, derivs.
 131-53-3 131-56-6 131-57-7 136-36-7
 1421-49-4 1843-05-6 2440-22-4
 2553-08-4 2985-59-3 3147-75-9
 3147-76-0 3846-71-7 3864-99-1
 3896-11-5 4221-80-1 25973-55-1
 28262-12-6 33059-05-1 36437-37-3

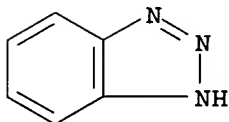
41556-26-7 42151-35-9 52829-07-9
63843-89-0 67845-93-6 70321-86-7
84268-22-4 84268-23-5 91259-39-1
91259-40-4 91274-89-4

RL: USES (Uses)

(UV absorber, for prevention of fading and discoloration of color images)

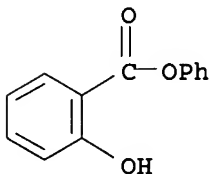
RN 95-14-7 HCAPLUS

CN 1H-Benzotriazole (8CI, 9CI) (CA INDEX NAME)



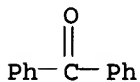
RN 118-55-8 HCAPLUS

CN Benzoic acid, 2-hydroxy-, phenyl ester (9CI) (CA INDEX NAME)



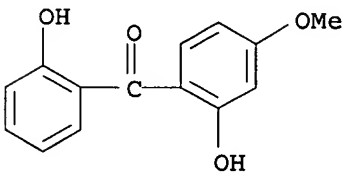
RN 119-61-9 HCAPLUS

CN Methanone, diphenyl- (9CI) (CA INDEX NAME)



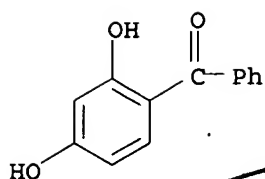
RN 131-53-3 HCAPLUS

CN Methanone, (2-hydroxy-4-methoxyphenyl) (2-hydroxyphenyl) - (9CI) (CA INDEX NAME)



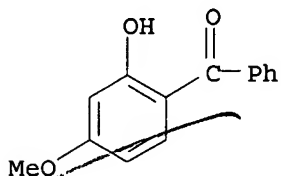
RN 131-56-6 HCAPLUS

CN Methanone, (2,4-dihydroxyphenyl)phenyl- (9CI) (CA INDEX NAME)



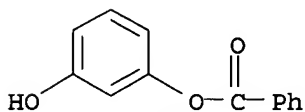
RN 131-57-7 HCAPLUS

CN Methanone, (2-hydroxy-4-methoxyphenyl)phenyl- (9CI) (CA INDEX NAME)



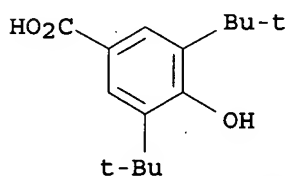
RN 136-36-7 HCAPLUS

CN 1,3-Benzenediol, monobenzoate (9CI) (CA INDEX NAME)



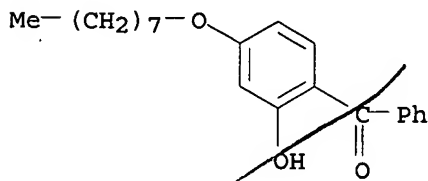
RN 1421-49-4 HCAPLUS

CN Benzoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy- (9CI) (CA INDEX NAME)



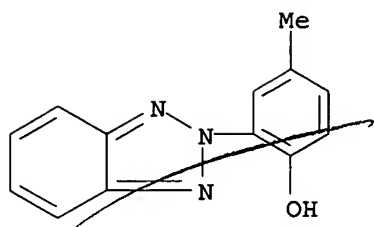
RN 1843-05-6 HCAPLUS

CN Methanone, [2-hydroxy-4-(octyloxy)phenyl]phenyl- (9CI) (CA INDEX NAME)

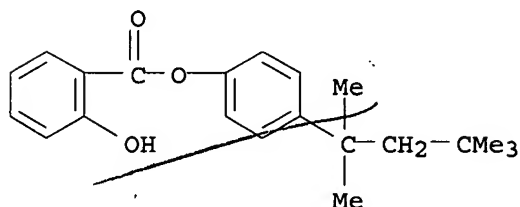


RN 2440-22-4 HCAPLUS

CN Phenol, 2-(2H-benzotriazol-2-yl)-4-methyl- (9CI) (CA INDEX NAME)

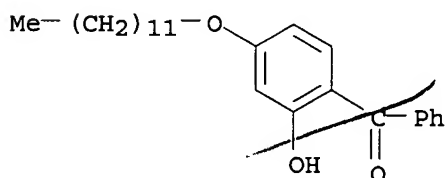


RN 2553-08-4 HCAPLUS

CN Benzoic acid, 2-hydroxy-, 4-(1,1,3,3-tetramethylbutyl)phenyl ester (9CI)
(CA INDEX NAME)

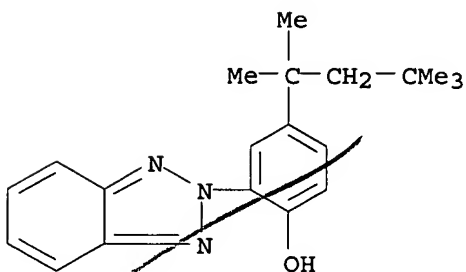
RN 2985-59-3 HCAPLUS

CN Methanone, [4-(dodecyloxy)-2-hydroxyphenyl]phenyl- (9CI) (CA INDEX NAME)



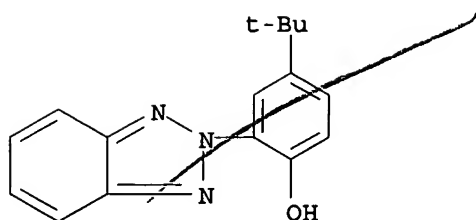
RN 3147-75-9 HCAPLUS

CN Phenol, 2-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)- (7CI, 8CI, 9CI) (CA INDEX NAME)

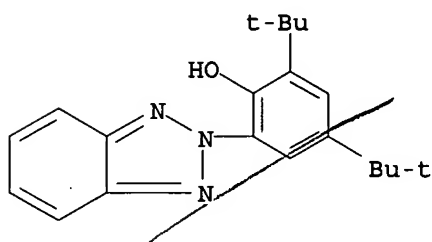


RN 3147-76-0 HCAPLUS

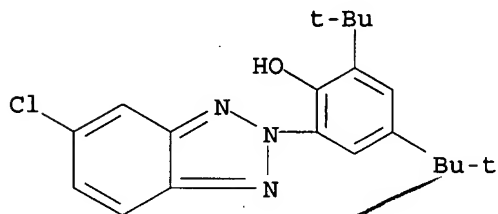
CN Phenol, 2-(2H-benzotriazol-2-yl)-4-(1,1-dimethylethyl)- (9CI) (CA INDEX NAME)



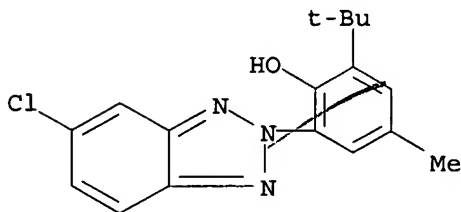
RN 3846-71-7 HCAPLUS
 CN Phenol, 2-(2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylethyl)- (9CI) (CA INDEX NAME)



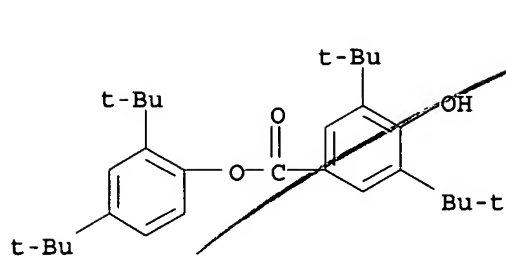
RN 3864-99-1 HCAPLUS
 CN Phenol, 2-(5-chloro-2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylethyl)- (9CI) (CA INDEX NAME)



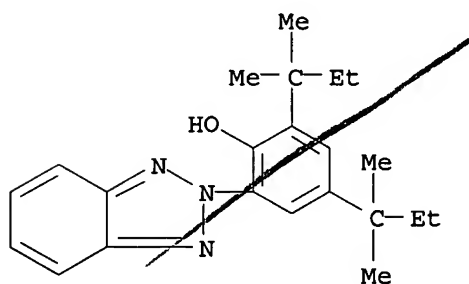
RN 3896-11-5 HCAPLUS
 CN Phenol, 2-(5-chloro-2H-benzotriazol-2-yl)-6-(1,1-dimethylethyl)-4-methyl- (9CI) (CA INDEX NAME)



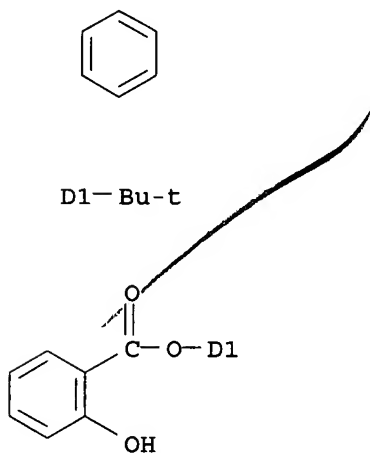
RN 4221-80-1 HCAPLUS
 CN Benzoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-, 2,4-bis(1,1-dimethylethyl)phenyl ester (9CI) (CA INDEX NAME)



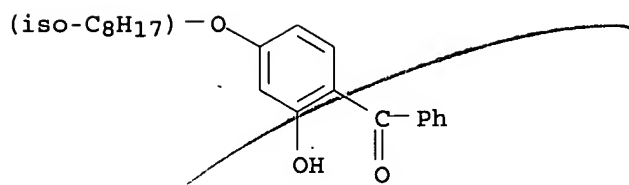
RN 25973-55-1 HCAPLUS
 CN Phenol, 2-(2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylpropyl)- (9CI) (CA INDEX NAME)



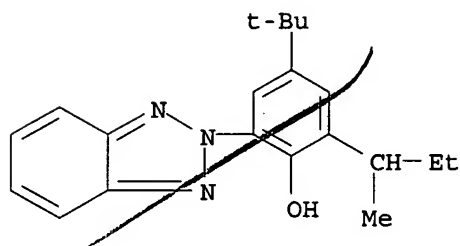
RN 28262-12-6 HCAPLUS
 CN Benzoic acid, 2-hydroxy-, (1,1-dimethylethyl)phenyl ester (9CI) (CA INDEX NAME)



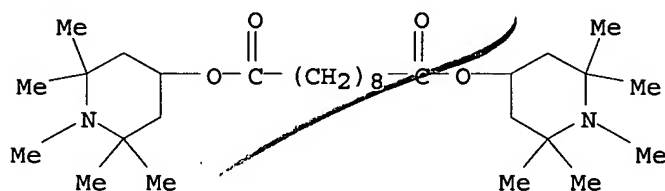
RN 33059-05-1 HCAPLUS
 CN Methanone, [2-hydroxy-4-(isooctyloxy)phenyl]phenyl- (9CI) (CA INDEX NAME)



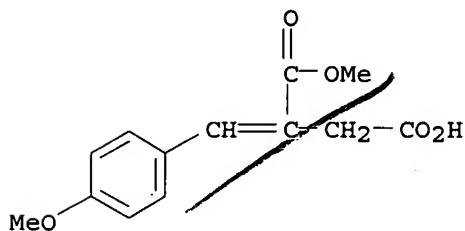
RN 36437-37-3 HCAPLUS

CN Phenol, 2-(2H-benzotriazol-2-yl)-4-(1,1-dimethylethyl)-6-(1-methylpropyl)-
(9CI) (CA INDEX NAME)

RN 41556-26-7 HCAPLUS

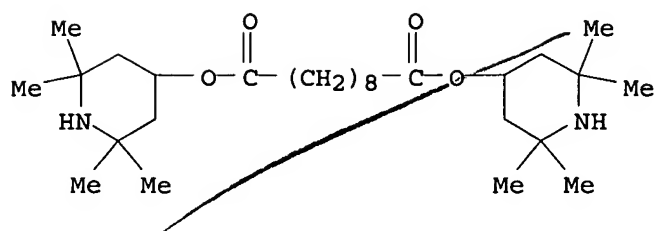
CN Decanedioic acid, bis(1,2,2,6,6-pentamethyl-4-piperidinyl) ester (9CI)
(CA INDEX NAME)

RN 42151-35-9 HCAPLUS

CN Butanedioic acid, [(4-methoxyphenyl)methylene]-, 1-methyl ester (9CI) (CA
INDEX NAME)

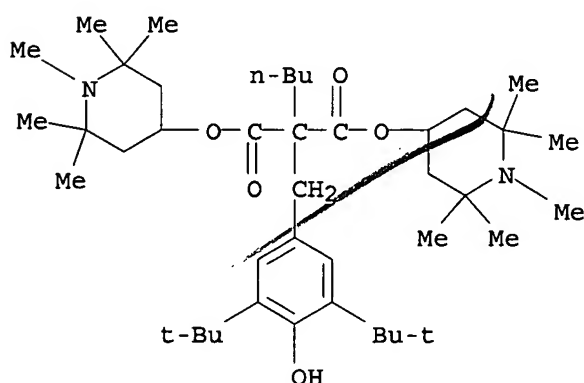
RN 52829-07-9 HCAPLUS

CN Decanedioic acid, bis(2,2,6,6-tetramethyl-4-piperidinyl) ester (9CI) (CA
INDEX NAME)



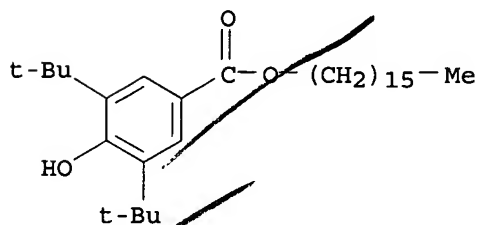
RN 63843-89-0 HCAPLUS

CN Propanedioic acid, [[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]methyl]butyl-, bis(1,2,2,6,6-pentamethyl-4-piperidinyl) ester (9CI) (CA INDEX NAME)



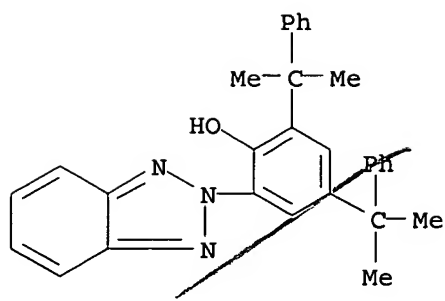
RN 67845-93-6 HCAPLUS

CN Benzoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-, hexadecyl ester (9CI) (CA INDEX NAME)



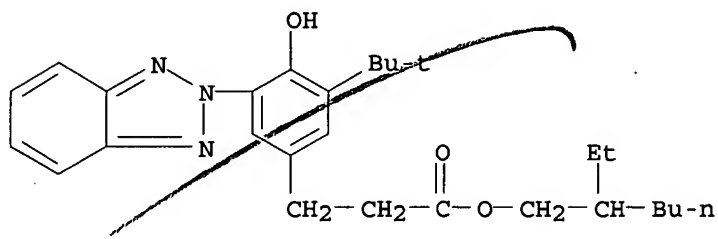
RN 70321-86-7 HCAPLUS

CN Phenol, 2-(2H-benzotriazol-2-yl)-4,6-bis(1-methyl-1-phenylethyl)- (9CI) (CA INDEX NAME)



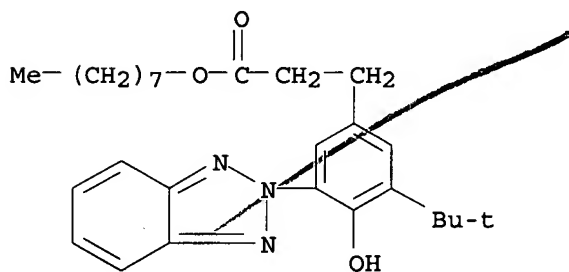
RN 84268-22-4 HCAPLUS

CN Benzenepropanoic acid, 3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxy-, 2-ethylhexyl ester (9CI) (CA INDEX NAME)



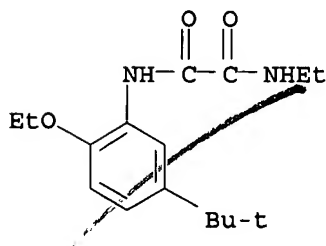
RN 84268-23-5 HCAPLUS

CN Benzenepropanoic acid, 3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxy-, octyl ester (9CI) (CA INDEX NAME)



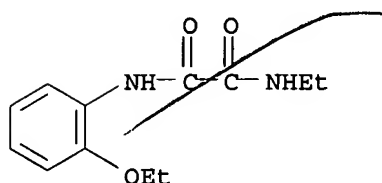
RN 91259-39-1 HCAPLUS

CN Ethanediameide, N-[5-(1,1-dimethylethyl)-2-ethoxyphenyl]-N'-ethyl- (9CI) (CA INDEX NAME)



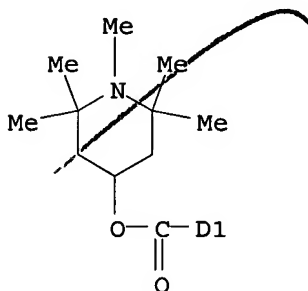
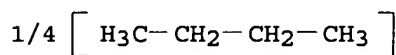
RN 91259-40-4 HCAPLUS

CN Ethanediame, N-(2-ethoxyphenyl)-N'-ethyl- (9CI) (CA INDEX NAME)



RN 91274-89-4 HCAPLUS

CN Butanetetra-carboxylic acid, tetrakis(1,2,2,6,6-pentamethyl-4-piperidiny) ester (9CI) (CA INDEX NAME)



L68 ANSWER 11 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1979:86260 HCAPLUS

DOCUMENT NUMBER: 90:86260

TITLE: Infrared and ultraviolet spectra of 5-aminobenzotriazoles

AUTHOR(S): Kovac, S.; Martvon, A.; Helova, M.

CORPORATE SOURCE: Zb. Pr. Chemickotechnol. Fak., Slov. Vys. Sk. Tech., Bratislava, Czech.

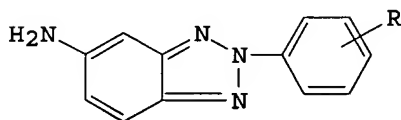
SOURCE: Zbornik Prac Chemickotechnologickej Fakulty SVST (1978), Volume Date 1975-1976 37-41

CODEN: ZPCTA7; ISSN: 0524-2185

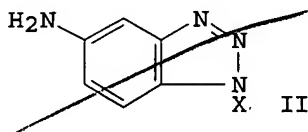
DOCUMENT TYPE: Journal

LANGUAGE: English

GI



I



II

AB IR and UV data for I (R = H, p-MeO, p-Br, etc.) and UV data for II (X =

Ph, cyclohexyl, p-ClC₆H₄) were given. Three IR bands for I, observed in the region of 1590-1640 cm⁻¹, are assigned to the stretching vibrations of the C:C and C:N bonds. I **absorb** at longer UV wavelengths than II.

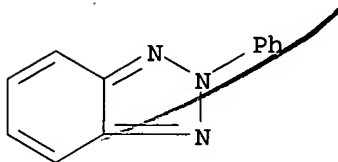
IT 1916-72-9

RL: PRP (Properties)

(IR and Raman spectra of)

RN 1916-72-9 HCAPLUS

CN 2H-Benzotriazole, 2-phenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



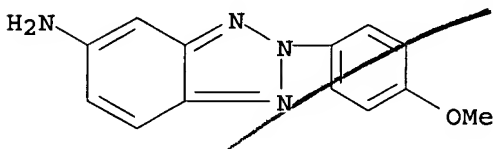
IT 6659-92-3 21819-66-9 40655-09-2
40655-10-5 40655-11-6 69323-28-0
69323-29-1

RL: PRP (Properties)

(IR and UV spectra of)

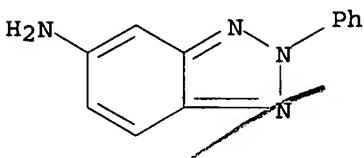
RN 6659-92-3 HCAPLUS

CN 2H-Benzotriazol-5-amine, 2-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



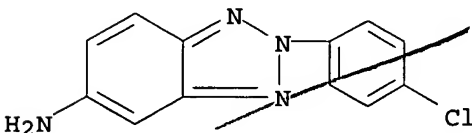
RN 21819-66-9 HCAPLUS

CN 2H-Benzotriazol-5-amine, 2-phenyl- (9CI) (CA INDEX NAME)



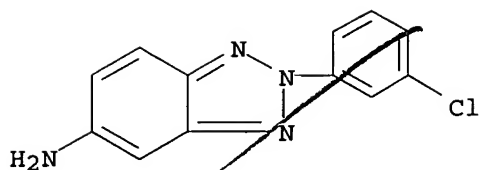
RN 40655-09-2 HCAPLUS

CN 2H-Benzotriazol-5-amine, 2-(4-chlorophenyl)- (9CI) (CA INDEX NAME)



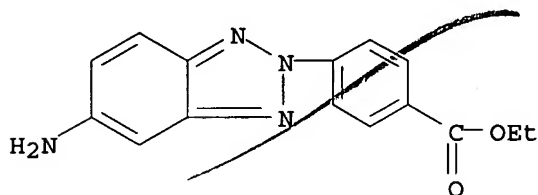
RN 40655-10-5 HCAPLUS

CN 2H-Benzotriazol-5-amine, 2-(3-chlorophenyl)- (9CI) (CA INDEX NAME)



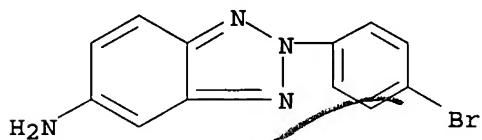
RN 40655-11-6 HCAPLUS

CN Benzoic acid, 4-(5-amino-2H-benzotriazol-2-yl)-, ethyl ester (9CI) (CA INDEX NAME)



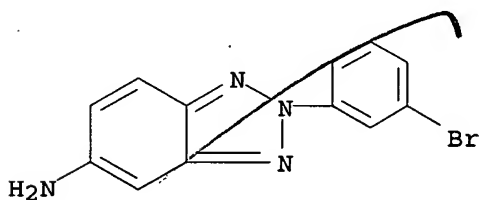
RN 69323-28-0 HCAPLUS

CN 2H-Benzotriazol-5-amine, 2-(4-bromophenyl)- (9CI) (CA INDEX NAME)



RN 69323-29-1 HCAPLUS

CN 2H-Benzotriazol-5-amine, 2-(3-bromophenyl)- (9CI) (CA INDEX NAME)



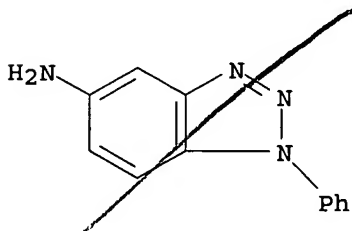
IT 54883-78-2 54883-81-7 69323-30-4

RL: PRP (Properties)

(UV of)

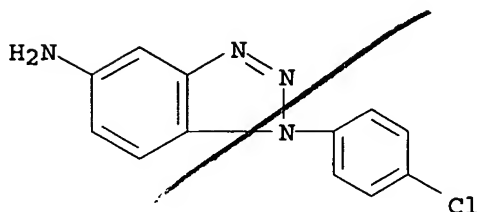
RN 54883-78-2 HCAPLUS

CN 1H-Benzotriazol-5-amine, 1-phenyl- (9CI) (CA INDEX NAME)



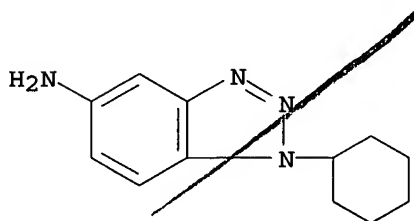
RN 54883-81-7 HCAPLUS

CN 1H-Benzotriazol-5-amine, 1-(4-chlorophenyl)- (9CI) (CA INDEX NAME)



RN 69323-30-4 HCAPLUS

CN 1H-Benzotriazol-5-amine, 1-cyclohexyl- (9CI) (CA INDEX NAME)



L68 ANSWER 12 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1978:463858 HCAPLUS

DOCUMENT NUMBER: 89:63858

TITLE: **Lenses** with a photochromic gradient provided by an ultraviolet ray-absorbing coating

INVENTOR(S): Whitney, Donald Barlow

PATENT ASSIGNEE(S): American Optical Corp., USA

SOURCE: Fr. Demande, 14 pp.

CODEN: FRXXBL

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2349149	A1	19771118	FR 1977-10993	19770412 <--
FR 2349149	B1	19800509		
DE 2712859	A1	19771103	DE 1977-2712859	19770321 <--
GB 1520099	A	19780802	GB 1977-12305	19770323 <--
JP 52128156	A2	19771027	JP 1977-37703	19770404 <--
PRIORITY APPLN. INFO.:			US 1976-678583	A 19760420 <--

AB **Ophthalmic lenses** or blanks are heat treated to develop phototropic or photochromic properties and coated with a transparent film containing a uniformly distributed UV absorber. The thickness of the film varies progressively so that the **lens** is substantially resistant to actinic energy in the part for reading and is almost unprotected in the part for distant vision. In bifocal **lenses** the part for reading is coated. 2,2',4,4'-**Tetrahydroxybenzophenone** [131-55-5], 2,4-dihydroxybenzophenone [131-56-6], or 2-hydroxy-4-methoxybenzophenone-5-sulfonic acid [4065-45-6] is used to absorb UV radiation. Thus, a glass contains SiO₂ 53, Al₂O₃ 10.5, ZrO₂ 2, Li₂O 2.1, BaO 6, SrO 0.2, Na₂O 0.6, NaF 1, NaCl 1, Ag₂O 0.4, PbO 5.1, CuO 0.1, and B₂O₃ 18 weight%. Transition metal oxides are

used as colorants, e.g. Fe₂O₃, Cr₂O₃, CoO, Nd₂O₃, and Pr₂O₃, and particles of AgCl, AgBr, and AgI give photochromic properties.

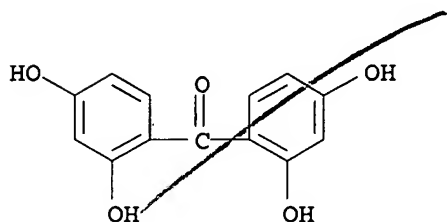
IT 131-55-5 131-56-6 4065-45-6

RL: USES (Uses)

(coatings, on multifocal lenses for UV radiation absorption)

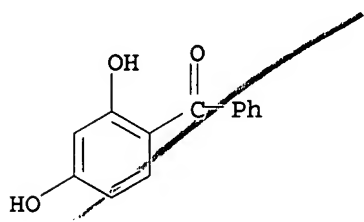
RN 131-55-5 HCAPLUS

CN Methanone, bis(2,4-dihydroxyphenyl)- (9CI) (CA INDEX NAME)



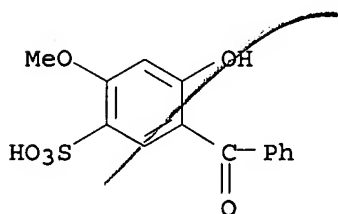
RN 131-56-6 HCAPLUS

CN Methanone, (2,4-dihydroxyphenyl)phenyl- (9CI) (CA INDEX NAME)



RN 4065-45-6 HCAPLUS

CN Benzenesulfonic acid, 5-benzoyl-4-hydroxy-2-methoxy- (7CI, 8CI, 9CI) (CA INDEX NAME)



IT 1304-28-5, uses and miscellaneous 1314-11-0, uses and miscellaneous 1314-23-4, uses and miscellaneous 1317-38-0, uses and miscellaneous 7647-14-5, uses and miscellaneous 7681-49-4, uses and miscellaneous 12057-24-8, uses and miscellaneous 20667-12-3

RL: USES (Uses)

(multifocal photochromic lenses, benzophenone derivative coatings on)

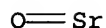
RN 1304-28-5 HCAPLUS

CN Barium oxide (BaO) (9CI) (CA INDEX NAME)

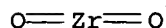
Ba=O

RN 1314-11-0 HCAPLUS

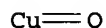
CN Strontium oxide (SrO) (6CI, 8CI, 9CI) (CA INDEX NAME)



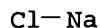
RN 1314-23-4 HCAPLUS
CN Zirconium oxide (ZrO₂) (8CI, 9CI) (CA INDEX NAME)



RN 1317-38-0 HCAPLUS
CN Copper oxide (CuO) (8CI, 9CI) (CA INDEX NAME)



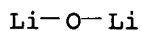
RN 7647-14-5 HCAPLUS
CN Sodium chloride (NaCl) (9CI) (CA INDEX NAME)



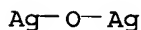
RN 7681-49-4 HCAPLUS
CN Sodium fluoride (NaF) (9CI) (CA INDEX NAME)



RN 12057-24-8 HCAPLUS
CN Lithium oxide (Li₂O) (8CI, 9CI) (CA INDEX NAME)



RN 20667-12-3 HCAPLUS
CN Silver oxide (Ag₂O) (8CI, 9CI) (CA INDEX NAME)



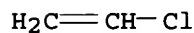
L68 ANSWER 13 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1973:406361 HCAPLUS
DOCUMENT NUMBER: 79:6361
TITLE: Transparent thermoplastic uv filter
PATENT ASSIGNEE(S): Solvay et Cie.
SOURCE: Belg., 12 pp.
CODEN: BEXXAL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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BE 786125 19721103 BE 19720711 <--
AB A uv filter which allowed tanning of the skin without reddening, i.e., a
 filter which was transparent to uv light >320 nm but filtered out uv light
 in the 300-20 nm range was prepared by including a suitable uv absorber with
 the thermoplastics. Thus, a 0.02-mm-thick film of PVC [9002-86-2
] containing 0.1% 2-phenylbenzotriazole [1916-72-9] was
 prepared which satisfied the requirements.
IT 9002-86-2 9002-88-4
 RL: USES (Uses)
 (phenylbenzotriazole-containing, for filters for uv light)
RN 9002-86-2 HCAPLUS
CN Ethene, chloro-, homopolymer (9CI) (CA INDEX NAME)

 CM 1

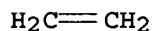
 CRN 75-01-4
 CMF C2 H3 Cl



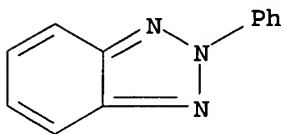
RN 9002-88-4 HCAPLUS
CN Ethene, homopolymer (9CI) (CA INDEX NAME)

 CM 1

 CRN 74-85-1
 CMF C2 H4



IT 1916-72-9
 RL: USES (Uses)
 (vinyl polymer uv filters containing)
RN 1916-72-9 HCAPLUS
CN 2H-Benzotriazole, 2-phenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L68 ANSWER 14 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1969:526012 HCAPLUS
DOCUMENT NUMBER: 71:126012
TITLE: 2-Equivalent couplers
INVENTOR(S): Sawdey, George W.
PATENT ASSIGNEE(S): Eastman Kodak Co.
SOURCE: Ger. Offen., 59 pp.
 CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 1800420	B2	19740829	DE 1968-1800420	19681001 <--
DE 1800420	C3	19750417		
US 3617291	A	19711102	US 1967-674090	19671010 <--
FR 1585559	A	19700123	FR 1968-1585559	19681008 <--
GB 1250318	A	19711020	GB 1968-1250318	19681010 <--
			US 1967-674090	A 19671010 <--

PRIORITY APPLN. INFO.:

GI For diagram(s), see printed CA Issue.

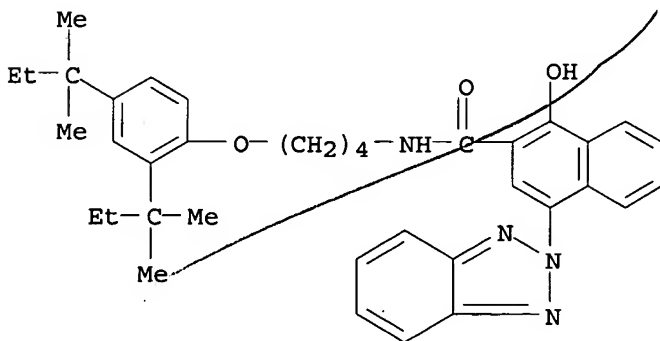
AB The preparation of 2-equivalent couplers of the general formula I which absorb uv rays, fluoresce blue, and are resistant to discoloration and spot formation is described. I are prepared by Zn dust reduction of a suitable O-nitrophenylazo compound. Thus, a mixture of 5.2 g. 1-phenyl-3-pentadecyl-4-(2-nitrophenylazo)-5-pyrazolone, 25 ml. 40% aqueous NaOH solution, and 400 ml. EtOH is refluxed and stirred, treated with 8 g. Zn dust, refluxed until colorless, cooled slowly, stirred for 1.5 hrs., excess Zn dust filtered and the solution acidified with HCl to give 82% I (R = 3-pentadecyl-1-phenyl - 5-pyrazolone-4-yl), m. 106-8° (MeOH). Similarly other I are prepared (RH, and m.p. given): 1,2-HOC10H6CONH(CH2)4OC6H3(C5H11-tert)2-2,4, 146-7°; BzCHCONHPh, 214-16°; tert-BuCOCH2CONHPh, 161-2°; cyanoacetyl-coumarone, 220-2°; 3-methyl-1-phenyl-5-pyrazolone, 154-6°; 3-[3-[α-(2,4-diamylphenoxy)acetamido]benzamido] - 1-(2,4,6-trichlorophenyl)-5-pyrazolone, 165-6°.

IT 24221-15-6P 24221-16-7P 24221-17-8P
24221-18-9P 24231-07-0P 25567-02-6P
25779-31-1P

RL: IMF (Industrial manufacture); PREP (Preparation)
(preparation of)

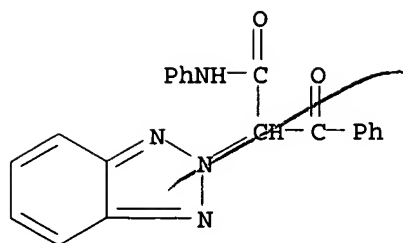
RN 24221-15-6 HCAPLUS

CN 2-Naphthamide, 4-(2H-benzotriazol-2-yl)-N-[4-(2,4-di-tert-pentylphenoxy)butyl]-1-hydroxy- (8CI) (CA INDEX NAME)

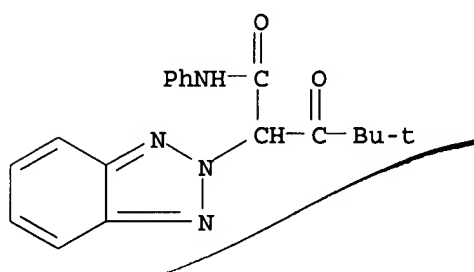


RN 24221-16-7 HCAPLUS

CN 2H-Benzotriazole-2-acetanilide, α-benzoyl- (8CI) (CA INDEX NAME)

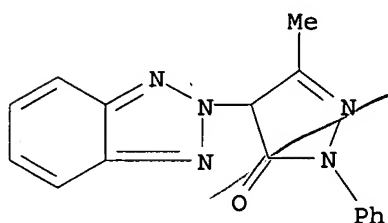


RN 24221-17-8 HCAPLUS

CN 2H-Benzotriazole-2-acetanilide, α -pivaloyl- (8CI) (CA INDEX NAME)

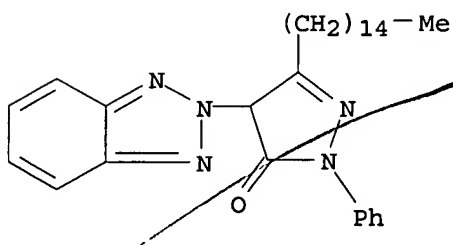
RN 24221-18-9 HCAPLUS

CN 3H-Pyrazol-3-one, 4-(2H-benzotriazol-2-yl)-2,4-dihydro-5-methyl-2-phenyl- (9CI) (CA INDEX NAME)



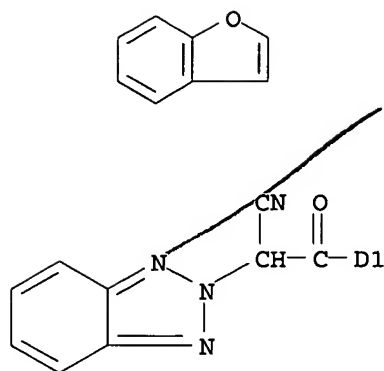
RN 24231-07-0 HCAPLUS

CN 2-Pyrazolin-5-one, 4-(2H-benzotriazol-2-yl)-3-pentadecyl-1-phenyl- (8CI) (CA INDEX NAME)



RN 25567-02-6 HCAPLUS

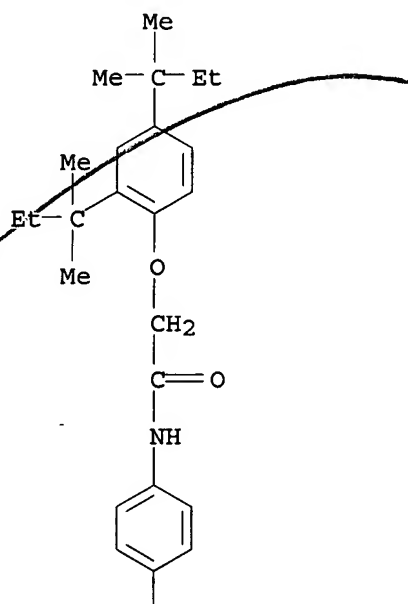
CN 2H-Benzotriazole-2-acetonitrile, α -(benzofuranylcabonyl)- (8CI, 9CI) (CA INDEX NAME)



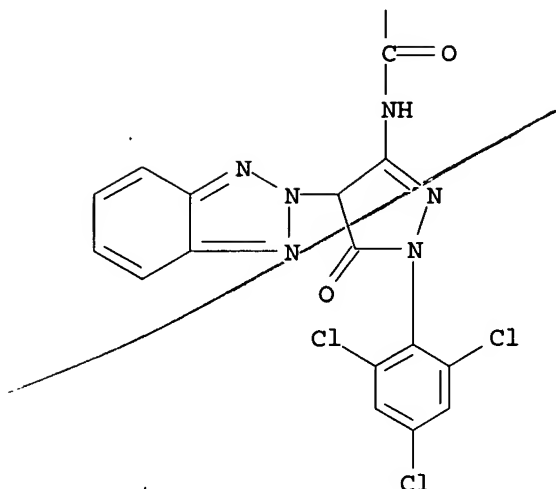
RN 25779-31-1 HCAPLUS

CN Acetanilide, 4'-[[4-(2H-benzotriazol-2-yl)-5-oxo-1-(2,4,6-trichlorophenyl)-2-pyrazolin-3-yl]carbamoyl]-2-(2,4-di-tert-pentylphenoxy)-(8CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



L68 ANSWER 15 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1967:454265 HCAPLUS
 DOCUMENT NUMBER: 67:54265
 TITLE: Heat-stable metal and organometallic 2-(
benzotriazolyl phenoxides
 INVENTOR(S): Ismail, Roshdy M.
 PATENT ASSIGNEE(S): Dynamit Nobel A.-G.
 SOURCE: Fr., 4 pp.
 CODEN: FRXXAK
 DOCUMENT TYPE: Patent
 LANGUAGE: French
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 1457966		19661104	FR	19651210 <--

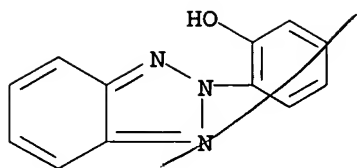
GI For diagram(s), see printed CA Issue.

AB 2-(o-Hydroxyphenyl)-2H-**benzotriazole** (I) is treated with esters of Sn and Al and also with Si compds., e.g. cyclotetrasilazanes and CH₂:CHSiCl₃, to give compds. of the general formula II, where M is Sn, Al, or Si, x is the valence of M, and R is an alkyl or alkenyl group, which **absorb uv** rays in the 2000-4000 Å. range. Thus, a mixture of 42.2 g. I and 29.4 g. Bu₂Sn(OMe)₂ is heated at 80-100° to give dibutyltin bis[o-(2H-**benzotriazol**-2-yl)phenoxide], m. 115-20°. Similarly prepared are the following II (M, n, R, x - n, and m.p. given): Al, 0, -, 3, 236-40°; Si, 2, Me, 2, 65-8° (n70D 1.621); Si, 1, vinyl, 3, 120°.

IT **10096-91-0DP**, Phenol, o-2H-**benzotriazol**-2-yl-, aluminum complex **15239-61-9P 15239-62-0P 15239-63-1P 15272-15-8P**
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)

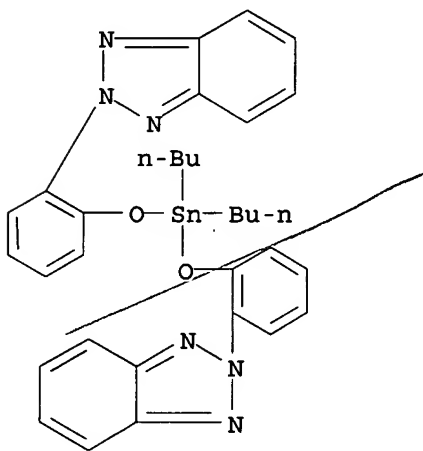
RN 10096-91-0 HCAPLUS

CN Phenol, 2-(2H-**benzotriazol**-2-yl)- (9CI) (CA INDEX NAME)



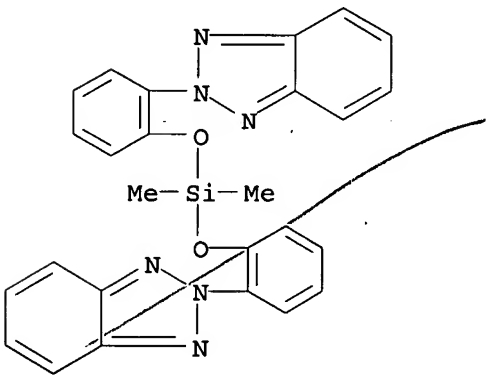
RN 15239-61-9 HCAPLUS

CN 2H-Benzotriazole, 2,2'-[(dibutylstannylene)bis(oxy-2,1-phenylene)]bis- (9CI) (CA INDEX NAME)



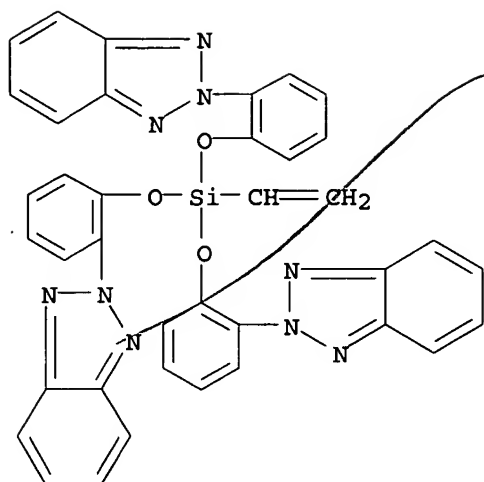
RN 15239-62-0 HCAPLUS

CN 2H-Benzotriazole, 2,2'-[(dimethylsilylene)bis(oxy-o-phenylene)]bis- (8CI) (CA INDEX NAME)



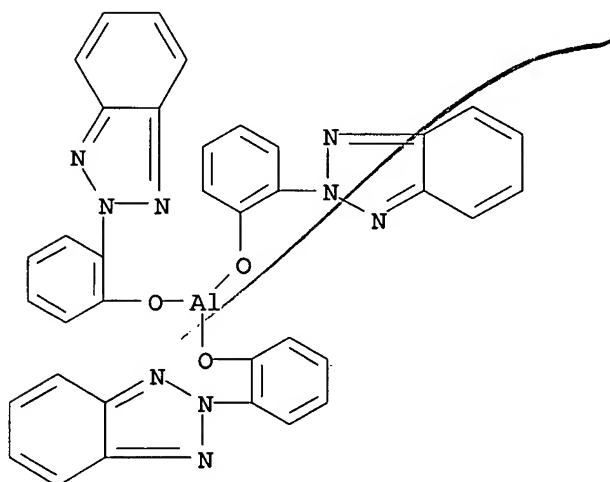
RN 15239-63-1 HCAPLUS

CN 2H-Benzotriazole, 2,2',2''-[(ethenylsilylidyne)tris-2,1-phenylene]tris- (9CI) (CA INDEX NAME)



RN 15272-15-8 HCAPLUS

CN Aluminum, tris(o-2H-benzotriazol-2-ylphenolato)- (8CI) (CA INDEX NAME)



L68 ANSWER 16 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1967:40664 HCAPLUS

DOCUMENT NUMBER: 66:40664

TITLE: Action of light on coloring matters

AUTHOR(S): McLaren, Keith

CORPORATE SOURCE: Imp. Chem. Ind. Ltd., Manchester, UK

SOURCE: American Perfumer and Cosmetics (1966),
81(11), 43-9

CODEN: APRCAS; ISSN: 0003-0392

DOCUMENT TYPE: Journal

LANGUAGE: English

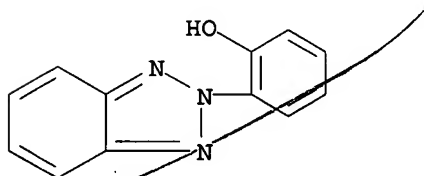
AB A review is given of dye fading and of the possibilities of overcoming the defects of inadequate light stability. Fundamental photochemistry, radiation and radiationless transitions, energy transfer, excited states, photochem. activity of various wave bands, fundamental research with model compds., and chemical reactions involving excited states are discussed. Some

dyes are reduced or oxidized by light, but only 2 methods have proven successful for improving the light-fastness of given dye-substrate combinations: (1) the chelation technique which has enabled the synthesis of new metal-containing dyes or complexes, and (b) the use of uv absorbers based on derivs. of o-hydroxybenzophenone, hydroxybenzotriazole, and acrylonitrile (they are best incorporated in a colorless screen or a transparent lacquer). The uv absorbers should absorb strongly over the whole daylight uv range (295-400 mμ), should not absorb in the visible, should be stable, and should not cause any change in the medium. The absorbers are also incorporated in the dye-substrate system. 31 references.

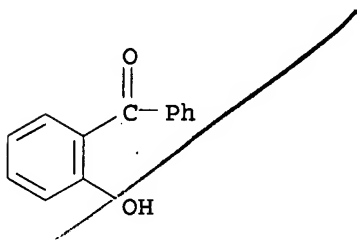
IT 107-13-1, Acrylonitrile
 RL: BIOL (Biological study)
 (ultraviolet light absorbers from)
 RN 107-13-1 HCAPLUS
 CN 2-Propenenitrile (9CI) (CA INDEX NAME)



IT 10096-91-0D, Phenol, o-2H-benzotriazol-2-yl-, derivs.
 RL: BIOL (Biological study)
 (uv absorbers from)
 RN 10096-91-0 HCAPLUS
 CN Phenol, 2-(2H-benzotriazol-2-yl)- (9CI) (CA INDEX NAME)



IT 117-99-7
 RL: BIOL (Biological study)
 (uv light absorbers from)
 RN 117-99-7 HCAPLUS
 CN Methanone, (2-hydroxyphenyl)phenyl- (9CI) (CA INDEX NAME)



L68 ANSWER 17 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1966:482841 HCAPLUS
 DOCUMENT NUMBER: 65:82841
 ORIGINAL REFERENCE NO.: 65:15555g-h,15556a-d
 TITLE: 2,3-Benzo-1,3a,4,6a-tetraazapentalene compounds
 INVENTOR(S): Carboni, Rudolph A.
 PATENT ASSIGNEE(S): E. I. du Pont de Nemours & Co.

SOURCE: 3 pp.
 DOCUMENT TYPE: Patent
 LANGUAGE: Unavailable
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

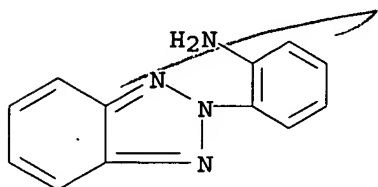
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3262942		19660726	US	19631107 <--

GI For diagram(s), see printed CA Issue.

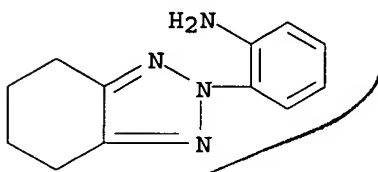
AB Compds. of the general formula I **absorb** uv radiation, are generally colorless, and are useful for the preparation of sunburn screening creams. Thus, a solution of 1.3 g. 2-(o-aminophenyl) **benzotriazole** (II) in 25 ml. AcOH was catalytically hydrogenated at 40 psi. over 100 mg. 10% Pd-C catalyst, the solution filtered, the solvent vacuum-distilled, an Et2O solution of the residue washed with dilute Na2CO3 solution, and the organic layer evaporated to give 2-(o-aminophenyl)-4,5,6,7-**tetrahydrobenzotriazole** (III), m. 78-80° (petroleum ether), v 1620, 1480, 968, and 742 cm.-2 III (10.3 g.) was diazotized, the mixture stirred for 90 min., the solution filtered, an aqueous solution of 3.3 g. NaN3 added dropwise, and the mixture stirred at 5° for 90 min. to give 6.3 g. 2-(o-azidophenyl)-4,5-tetramethylene-1,2,3-triazole (IV), m. 48.5-96° (C5H12). IV (10.3 g.) in 200 ml. Decalin was refluxed for 1 hr. (N evolved), and most of the Decalin distilled to give 4.35 g. faintly yellow I [R1R2 = (CH2)4, n = 0], m. 133° (C6H14), λmaximum 251, 278, and 242 mμ (ε = 28, 200, 2850, and 25,900, resp.). Similarly, I (n = 0, R1 = R2 = H) (V) and I (n = 0, R1 = R2 = Me) were prepared. A solution of 0.84 g. V in 5 ml. HCONMe2 was treated with 0.70 g. [(NC)2C:]2 in 10 ml. HCONMe2 (color changing from green to red), the mixture warmed on a steam bath for 30 min., poured on 100 g. ice, the precipitate (0.85 g.) filtered, washed with H2O, and dried under N to give I [R1 = C(CN):-C(CN)2, R2 = H, n = 0], m. 264.5-6° (C6H6-C6H14), λmaximum 505, 383, 322, 308, and 231 mμ (ε = 27,500, 6300, 12,100, 9756, and 16,620), which dyed acetate deep rose and Dacron salmon pink. Nitration of V gave I (R1 = NO2, R2 = H, X = NO2, n = 1 or 2); reaction of V with ClSO3H gave I (R1 = SO2Cl, R2 = H, X = SO2Cl, n = 1); reaction of V with Cl in CCl4 gave I (R1 = Cl, R2 = H, X = Cl, n = 2). Preparation of intermediates: Anhydrous CuSO4 (12.8 g.) was added in portions with stirring to 4.4 g. (o-H2N-C6H4N:)2 in 50 ml. pyridine at room temperature After 30 min. the mixture was heated on a steam bath for 1 hr., cooled, poured into 4 vols. ice-H2O, extracted with four 150-ml. portions of Et2O, the combined exts. treated with activated C, dried over anhydrous Na2SO4, and evaporated to dryness, leaving a yellow oil which solidified on cooling; petroleum ether was added, the slurry filtered, the crystalline solid taken up in hot EtOH, and the solution cooled to give a 64% yield of II, yellow crystals, m. 97-8° λmaximum 3570, 2960, 2680, and 2290 mμ (ε = 9700, 12,000, 6300, and 20,400), ir bands at 2.98, 3.10, 6.10, and 10.3 μ. A mixture of 34.5 g. 1,2,3-triazole, 150 g. 2-ClC6H4NO2, 50 g. NaOAc, and 5 g. Cu powder was stirred for 25 hrs. at 205° (AcOH distilled from the mixture during the reaction), the mixture poured on ice, CH2Cl2 added, the mixture filtered, 2-Cl-C6H4NO2 steam distilled, and the residue chromatographed (Al2O3) with CH2Cl2 as eluant to give 2-(o-nitrophenyl)-1,2,3-triazole (VI), m. 27.0-7.5° [C5H12-C6H6 (5:3) at -20°], λmax 238 mμ (ε = 15,200), with shoulders at 265 and 300 mμ (ε = 7350 and 2400).

VI was reduced to the amino compound which was used to prepare IV.

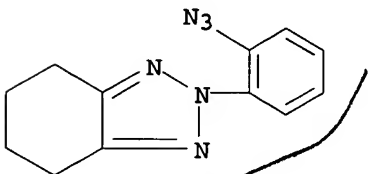
IT 1211-08-1, 2H-Benzotriazole, 2-(o-aminophenyl)-
 3364-33-8, 2H-Benzotriazole, 2-(o-aminophenyl)-4,5,6,7-
 tetrahydro- 10260-97-6, 2H-Benzotriazole,
 2-(o-azidophenyl)-4,5,6,7-tetrahydro- 10261-02-6,
 2H-1,2,3-Triazole, 2-(o-nitrophenyl)-
 (preparation of)
 RN 1211-08-1 HCAPLUS
 CN Benzenamine, 2-(2H-benzotriazol-2-yl)- (9CI) (CA INDEX NAME)



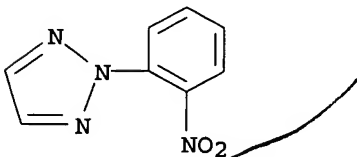
RN 3364-33-8 HCAPLUS
 CN 2H-Benzotriazole, 2-(o-aminophenyl)-4,5,6,7-tetrahydro- (7CI, 8CI) (CA INDEX NAME)



RN 10260-97-6 HCAPLUS
 CN 2H-Benzotriazole, 2-(o-azidophenyl)-4,5,6,7-tetrahydro- (7CI, 8CI) (CA INDEX NAME)



RN 10261-02-6 HCAPLUS
 CN 2H-1,2,3-Triazole, 2-(2-nitrophenyl)- (9CI) (CA INDEX NAME)



L68 ANSWER 18 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1966:473541 HCAPLUS

DOCUMENT NUMBER: 65:73541
 ORIGINAL REFERENCE NO.: 65:13726d-h,13727a-b
 TITLE: Benzotetraazapentalenes
 INVENTOR(S): Kauer, James C.
 PATENT ASSIGNEE(S): E. I. du Pont de Nemours & Co.
 SOURCE: 7 pp.
 DOCUMENT TYPE: Patent
 LANGUAGE: Unavailable
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3262943		19660726	US	19631107 <--

GI For diagram(s), see printed CA Issue.

AB The compds. described in U.S. 3,166,567 (CA 63, 7018d) are more easily prepared by a new process using R3P or (RO)3P to cyclize o-nitrophenyldiazo compds. (I) where R1, R2, and R3 may be components of a heterocyclic ring. Thus, a solution of 4.8 g. 1-(o-nitrophenyl)benzotriazole (II) and 11 g. (BuO)3HP in 100 ml. xylene was refluxed 18 hrs., cooled, and filtered to give 1.87 g. (another 0.35 g. was obtained by dilution with 300 ml. pentane) 2,3:4,5-dibenzo-1,3a,6,6a-tetraazapentalene (III) (loc. cit.). Similarly prepared were the yellow 3-nitro derivative of III, m. 290-6°, after CH2Cl2 elution through an alumina column; 2,3-benzo-4,5-bis(carbomethoxy)-1,3a,6,6a-tetraazapentalene, m. 127.0-8.4° MeOH and 3:1 C6H6-hexane; 3-carbomethoxy-4-methoxy-v-triazolo[3,4- α]quinoxaline(sic), m. 193.8-5.0° (EtOH, then MeOH), from 4,5-bis(carbomethoxy)-1-(o-nitrophenyl)-1,2,3-triazole; and several others for which uv and ir spectral data are given. Nitration of 2,3-benzo-1,3a,6,6a-tetraazapentalene (IV) with 70% HNO3 yielded 2,3-(nitrobenzo)5-nitro-1,3a,6,6a-tetraazapentalene, m. 277.5-80.0° (Me2CO); 95% HNO3 gave the corresponding dinitrobenzo analog, m. 305.0-6.5 (decomposition) (Me2CO and 1:1 Me2CO-EtOH). A mixture of 0.84 g. IV and 0.70

g.

[(NC)2CH2]2 in 20 ml. HCONMe2 was warmed 0.5 hr., poured onto ice, stirred 15 min., filtered, and washed to give purple (tricyano)vinyl-2,3-benzo-1,3a,6,6a-tetraazapentalene, m. 236.0-7.4° (5:3 C6H6-hexane). 1-(o-Azidophenyl)-4,5,6,7-tetrahydrobenzotriazole (V) (8.0 g.) in 50 ml. o-Cl2C6H4 was slowly added to 40 ml. o-Cl2C6H4 kept at 180°, the mixture heated 1 hr. and evaporated in vacuo at 70°, and the residue chromatographed on alumina with CH2Cl2 to give 53% 4,5-tetramethylene-2,3-benzo-1,3a,6,6a-tetraazapentalene, m. 176.5-7.5 (EtOH, then MeOH). Benzotriazole (25 g.), 33 g. o-ClC6H4NO2 (VI), and 25 g. anhydrous powdered NaOAc was heated 17 hrs. at 215°, the excess VI steam distilled, the residue dissolved in 150 ml. warm C6H6, the solution chromatographed on a silicic acid column, and the adsorbate eluted with C6H6 (the first 620 ml. discarded and the next 1900 ml. evaporated) to give 4.39 g. yellow 2-(o-nitrophenyl)benzotriazole (VII), m. 132-3° (EtOH). Reduction of VII with Na2S in aqueous EtOH gave 2-(o-aminophenyl)benzotriazole, m. 93.5-4.0°. Elution of the column used to isolate VII with CH2Cl2 gave 13.64 g. orange II, m. 118.9-20.0° (EtOH). A modification of the above procedure yielded 2-(onitrophenyl)-1,2,3-triazole, m. 27.0-7.5° (5:3 pentane-C6H6). 2,3,4,5-Dibenzo-1,3a,6,6a-tetraazapentalene (45 g.) in 650 ml. EtOH was hydrogenated at 125° and 1000 psi. over 3 g. Pd-C to give 30% 1-(o-aminophenyl)-4,5,6,7-tetrahydrobenzotriazole (VIII), m. 115.5-6.2° (C6H6-hexane). A solution of 13.95 g. VIII in 150 ml. concentrated/HCl and 100 ml. H2O was mixed with 1.50 g. ice and cooled to -20

to

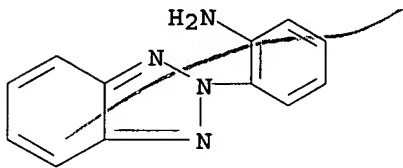
-25°, 4.8 g. NaNO2 in 30 H2O slowly added, the cold mixture stirred 1

hr., an aqueous solution of 5.0 g. NaN₃ slowly added, the mixture stirred 18 hrs. while the temperature rose to 25°, the solution made alkaline with KOH, and the mixts. filtered to give 11.7 g. V, m. 105.0-6.5 (C₆H₆-hexane). A solution of 50 g. o-N₃C₆H₄NO₂ (IX) in 300 ml. Me₂CO was heated 6 hrs. at 50-70° in a 1-1. autoclave with C₂H₂ at 250 psi. and the product filtered and evaporated to give 31.7 g. 1-(o-nitrophenyl)-1,2,3-triazole, m. 94.3-5.1° (3:1 C₆H₆-hexane). A solution of 41 g. IX and 40 g. (MeO₂CC.tplbond.)₂ in 25 ml. CHCl₃ was kept at 30° 15 days, gave 59.5 g. 4,5-bis(carbomethoxy)-1-(o-nitrophenyl)-1,2,3-triazole, m. 87.5-8.0° (aqueous MeOH, then 3:1 C₆H₆-hexane). Since the title compds. absorb uv light they are useful in preparing sunburn screening compns.

IT 1211-08-1, 2H-Benzotriazole, 2-(o-aminophenyl)-
 2229-36-9, 1H-Benzotriazole, 1-(o-nitrophenyl)-
 2425-91-4, Benzoic acid, 3,3'-(1,3,4-oxadiazole-2,5-diyl)di-,
 dihydrazide 10261-02-6, 2H-1,2,3-Triazole, 2-(o-nitrophenyl)-
 10560-64-2, Hydroxylamine, N-benzimidoyl-O-(3-chloropropionyl)-
 10560-68-6, 1H-Benzotriazole, 1-(o-azidophenyl)-4,5,6,7-
 tetrahydro- 10560-87-9, v-Triazolo[1,5-a]quinoxaline-3-
 carboxylic acid, 4-methoxy-, methyl ester 10560-89-1, 2H-
 Benzotriazole, 2-(o-nitrophenyl)- 10560-91-5, 1H-
 Benzotriazole, 1-(o-aminophenyl)-4,5,6,7-tetrahydro-
 10560-92-6, 1H-1,2,3-Triazole, 1-(o-nitrophenyl)-
 13064-34-1, 1H-1,2,3-Triazole-4,5-dicarboxylic acid,
 1-(o-nitrophenyl)-, dimethyl ester
 (preparation of)

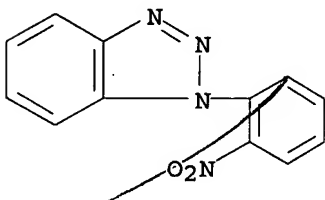
RN 1211-08-1 HCAPLUS

CN Benzenamine, 2-(2H-benzotriazol-2-yl)- (9CI) (CA INDEX NAME)



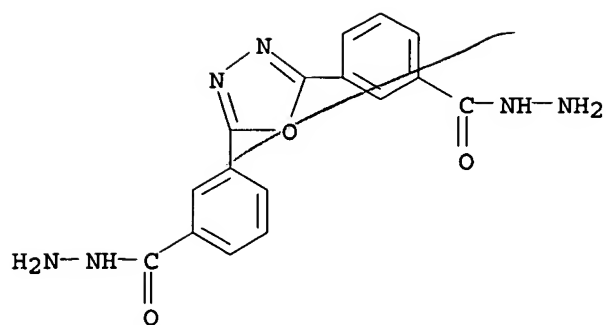
RN 2229-36-9 HCAPLUS

CN 1H-Benzotriazole, 1-(2-nitrophenyl)- (9CI) (CA INDEX NAME)



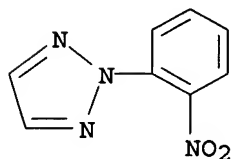
RN 2425-91-4 HCAPLUS

CN Benzoic acid, 3,3'-(1,3,4-oxadiazole-2,5-diyl)bis-, dihydrazide (9CI) (CA INDEX NAME)



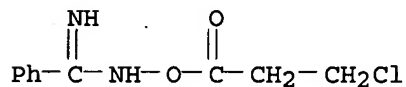
RN 10261-02-6 HCAPLUS

CN 2H-1,2,3-Triazole, 2-(2-nitrophenyl)- (9CI) (CA INDEX NAME)



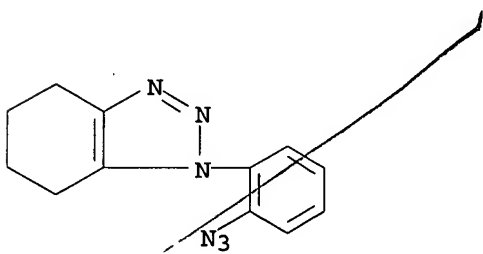
RN 10560-64-2 HCAPLUS

CN Benzenecarboximidamide, N-(3-chloro-1-oxopropoxy)- (9CI) (CA INDEX NAME)



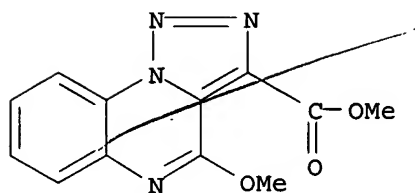
RN 10560-68-6 HCAPLUS

CN 1H-Benzotriazole, 1-(o-azidophenyl)-4,5,6,7-tetrahydro- (7CI, 8CI) (CA INDEX NAME)



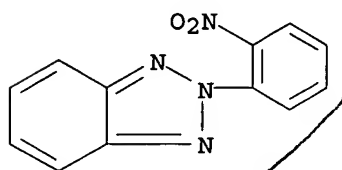
RN 10560-87-9 HCAPLUS

CN v-Triazolo[1,5-a]quinoxaline-3-carboxylic acid, 4-methoxy-, methyl ester (7CI, 8CI) (CA INDEX NAME)



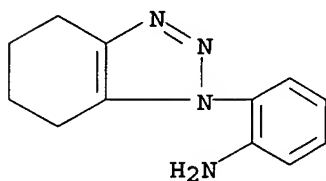
RN 10560-89-1 HCAPLUS

CN 2H-Benzotriazole, 2-(2-nitrophenyl)- (9CI) (CA INDEX NAME)



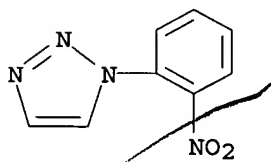
RN 10560-91-5 HCAPLUS

CN 1H-Benzotriazole, 1-(o-aminophenyl)-4,5,6,7-tetrahydro- (7CI, 8CI) (CA INDEX NAME)



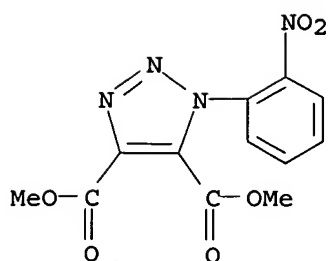
RN 10560-92-6 HCAPLUS

CN 1H-1,2,3-Triazole, 1-(2-nitrophenyl)- (9CI) (CA INDEX NAME)



RN 13064-34-1 HCAPLUS

CN 1H-1,2,3-Triazole-4,5-dicarboxylic acid, 1-(o-nitrophenyl)-, dimethyl ester (7CI, 8CI) (CA INDEX NAME)



L68 ANSWER 19 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1961:114883 HCAPLUS

DOCUMENT NUMBER: 55:114883

ORIGINAL REFERENCE NO.: 55:21605b-e

TITLE: Cellulose-reactive optical bleaching agents

PATENT ASSIGNEE(S): C I B A Ltd.

DOCUMENT TYPE: Patent

LANGUAGE: Unavailable

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 864900		19610412	GB	

AB Colorless, H₂O-soluble compds. which do not have affinity for cellulose, which **absorb ultraviolet** light, and which contain at least 1 halotriazine ring (substituted with a 2nd halogen atom, OH, or a Cl-3 alkoxy group) are fixed to cellulosic materials by use of an acid binder. They improve opacity of the materials to ultraviolet rays or produce optical bleaching effects. Suitable fluorescent compds. include certain aromatic halotriazine derivs. containing a heterocyclic ring, such as a triazole ring, and halotriazine derivs. of 4,4'-diaminostilbene-2,2'-disulfonic acid (I). In an example, 5-amino-2-(4-sulfophenyl) **benzotriazole** Na salt (II) was prepared by coupling diazotized p-H₂NC₆H₄SO₃H with m-(NH₂)₂C₆H₄ and oxidizing with ammoniacal CuSO₄. II 31.2 was dissolved in H₂O 1500, neutralized with Na₂CO₃, and stirred into a mixture of cyanuric chloride (III) 19.5 and H₂O 350 parts at 0-3°. A solution of Na₂CO₃ (6.0 parts) was added dropwise during 1 hr. while the temperature rose to 3-10°. The recovered product brightened bleached cotton cloth when applied from 0.05% aqueous solution and fixed with Na₂CO₃.

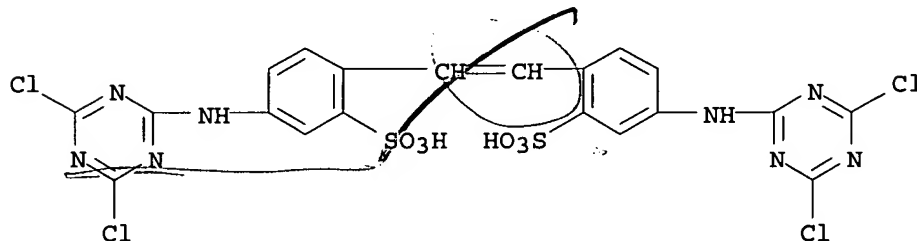
In the other examples, 4-dianilinotriazinylamino-4'-dichlorotriazinylamino-stilbene-2,2'-disulfonic acid, its analog containing a (HOCH₂CH₂)₂N group in place of an anilino group, its analog containing a OH group in place of a Cl atom, and 4,4'-bis(dichlorotriazinylamino)stilbene-2,2'-disulfonic acid (IV) were applied to cotton materials to produce optical bleaching. IV was prepared by condensing I with 2 moles of III. The others may be prepared by condensing 4-amino-4'-nitrostilbene-2,2'-disulfonic acid with 1 mole of III, replacing the Cl atoms with appropriate substituted amino groups, reducing the nitro group, condensing with another mole of III and, if desired, exchanging a Cl atom for an OH group.

IT **16013-46-0**, 2,2'-Stilbenedisulfonic acid, 4,4'-bis[(4,6-dichloro-s-triazin-2-yl)amino]- **110438-67-0**, Benzenesulfonic acid, p-[5-[(4,6-dichloro-s-triazin-2-yl)amino]-2H-**benzotriazol**-2-yl]- **119415-73-5**, 2,2'-Stilbenedisulfonic acid, 4-[(4-chloro-6-hydroxy-s-triazin-2-yl)amino]-4'-[(4,6-dianilino-s-triazin-2-yl)amino]- **122095-60-7**, 2,2'-Stilbenedisulfonic acid, 4-[(4,6-dianilino-s-

triazin-2-yl)amino]-4'-[(4,6-dichloro-s-triazin-2-yl)amino]-
(bleaching cotton with)

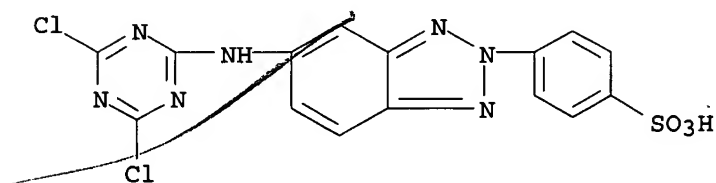
RN 16013-46-0 HCAPLUS

CN Benzenesulfonic acid, 2,2'-(1,2-ethenediyl)bis[5-[(4,6-dichloro-1,3,5-triazin-2-yl)amino]- (9CI) (CA INDEX NAME)



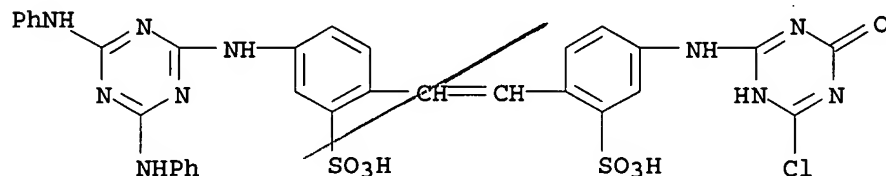
RN 110438-67-0 HCAPLUS

CN Benzenesulfonic acid, p-[5-[(4,6-dichloro-s-triazin-2-yl)amino]-2H-benzotriazol-2-yl]- (6CI) (CA INDEX NAME)



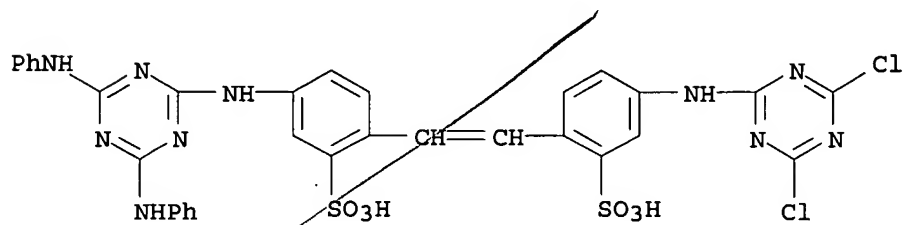
RN 119415-73-5 HCAPLUS

CN 2,2'-Stilbenedisulfonic acid, 4-[(4-chloro-6-hydroxy-s-triazin-2-yl)amino]-4'-[(4,6-dianilino-s-triazin-2-yl)amino]- (6CI) (CA INDEX NAME)



RN 122095-60-7 HCAPLUS

CN 2,2'-Stilbenedisulfonic acid, 4-[(4,6-dianilino-s-triazin-2-yl)amino]-4'-[(4,6-dichloro-s-triazin-2-yl)amino]- (6CI) (CA INDEX NAME)



IT 25708-70-7, Benzenesulfonic acid, p-(5-amino-2H-benzotriazol-2-yl)-
(preparation of)

RN 25708-70-7 HCAPLUS

CN Benzenesulfonic acid, 4-(5-amino-2H-benzotriazol-2-yl)- (9CI) (CA INDEX

NAME)

